

A decorative border in a Greek key (meander) pattern, rendered in black ink on a light-colored, textured background. The border follows the perimeter of the page, with the corners cut at a 45-degree angle.

# RECORD



Collection book  
of F. R. Fosberg  
#16

beginning # 25527  
ending # 26153

Descriptive passages  
photographed for file B. Decker  
1974

Collection and Field Note Book  
No. 16  
(July 12, 1946 - August 2, 1946)  
(25527 - 26153)

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## Collection and Field Note Book

No. 16

(July 12, 1946 - August 5, 1946)

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Collection book  
of F. R. Fosberg

#16

beginning #25527

ending #26153

Descriptive passages  
photographed for file B. Decker  
1974



Miniature  
Account Book  
No. S 136

UNIT RULED

Journal . . . . .  
Cash Book . . . . .  
Record (29 Lines) .  
Ledger, Double Entry  
Ledger, Single Entry

Made in 200 and 300 Pages

Made in U.S.A.

TO REORDER, SPECIFY NUMBER,  
RULING AND THICKNESS INDICATED  
ON BACKBONE OF THIS BOOK.



Collection book  
of F. R. Fosberg

beginning #25527

Impervious

Juon

from subvolley  
of Lurech  
of Rull  
distinct

Hotel

from subvolley  
upper leaf  
from  
front coral  
upper leaf  
from subvolley  
is too hard  
- 10 lines of subvolley  
or other out

1944 Caroline Is.

July 12 - Mt. Matade,  
Yap Island  
patch of moist woods  
on saddle of mt. the  
most conspicuous tree is  
*Calophyllum inophyllum*  
25527 *Scaevola frutescens* (Mill.) Kr.  
scattered in thickets  
on edge of forest.

28 *Premna* <sup>*obtusifolia* R. Br.</sup> ~~*integrifolia*~~ (*obtusifolia*)  
occasional

29 *Psychotria*  
rare

30 *Lygodium circinnatum*  
rare [ "pii" used to tie palm leaves  
together for making thatched  
roofs. even if dried well ]

31 *Vittaria elongata* [ lasts 4-5 years,  
longer than palm leaves ]  
common, epiphytic on tree trunks

32 *Schizaea dichotoma*  
common in bare spots  
on forest floor

33 *Randia carolinensis*  
one tree seen

34 *Macaranga* <sup>"yafon"</sup>  
common around edges of woods

35 *Macaranga*  
common

36 *Macaranga*  
common

Yap Is.

160 m.

shrub 2 m. tall,  
flowers white; fruit  
white. "naz" or "nath"  
small tree (others much  
larger); flowers <sup>pale</sup> green  
unpleasantly aromatic.

shrub 1 m. tall, [ "ar" ]  
flowers white. "tamlauai"  
vine, twining in  
bushes.

roofs. even if dried well [ "piu" (name also used for  
a thin variety of bamboo) ]  
tendrils coriaceous, arching

rhizome deeply buried,  
erect. "lau" one of many kinds  
of lau.

small tree, sterile  
"maluag" 2 kinds known, one with  
fruit, the other (this one) not, called the male.

tangled, weak culms,  
number of spikes variable.

small tree ♂ & ♀  
flowers yellow-green.

small tree  
♀ fls. green "bid" wood for firewood.  
leaves used for toilet paper for children, as  
they don't have diapers.

bearing  
"atanai"  
cattle feed.



1946 Caroline Is.

25537 *Trema*  
rare at edge of forest

38 *Cerbera manghas*

common  
said to have been recently  
introduced from Palau.

39 *Isora* <sup>casei Hance</sup> *carolinensis*

occasional

40 *Hedyotis*

occasional in thicket

41

42 *Polygala* ~~along trail~~ edge of forest

along trail, common

43 *Meryta seufftiana* Volk.

occasional in woods

same - bare, rather  
recently burned ridge,  
grassy, with *Lygodium*  
*scandens* coming up everywhere.

(44 *Commersonia bartramia* (L.) Merr.

common in edge of forest

45 *Rynchospora rubra* (Lam.) Malins  
common on slopes

46 *Cyperus*  
rare

47 *Euphorbia*  
occasional

flowers garlands  
used for around head  
put around dancing  
when dancing  
wood for  
nets for  
fish.

Yap Is.

shrub 4 m. tall slender  
"manin" when bananas are picked green and needed  
right away for a feast. This and some other plants  
are stuffed between the bananas and they ripen 3-4 days more quickly

shrub 2 m. tall. (others  
of tree size). flowers  
fragrant, white with  
buff eye, fruit green,  
smooth. "ria" said to

→ shrub up to 2.5 m. tall,  
flowers "gachen" ←  
erect, 1.5 m. tall; flowers  
white, corolla funnel form.  
shrub 2 m. tall,  
flowers pink. "chingug"  
flowers white

small tree, fruits  
greenish white.  
"changad"

"napof" bark used for  
making loin cloths.

small tree, branches  
distichous, flowers white  
loose tufts "pupul"

spikelets yellowish. "pue"  
st

erect, arching at tips. "murdai"



1946 Caroline Is.

25548a

Phyllanthus

25548

Lesamum indicum

along trail

49

Ipomoea gracilis <sup>littoralis</sup> Bl.

along trail

50

Tacca leontopodioides <sup>et al.</sup>

common on open ridge top

51

Scleria

common

52

Fimbristylis

rare

53

Ipomoea digitata L.

common

55

Mussaenda frondosa

one plant seen in thicket

"beck" (no 25550)

56

Glochidion

occasional in thickets

57

Hibiscus tiliaceus

common in thickets

58

58

same - low on east ridge

thickets and burned area

58

Paspalum

burned area, common

59

Selaginella

sides of shallow ravine

60

Hedyotis

thickets

vine-like, stems tough "ad"  
inner part of stem called "maling" used to  
weave with bamboo to make fish traps, can  
stand salt water for over 6 months

25560a Nepenthes mirabilis  
climbing in thickets

Yap Is.

"nel" name used  
in extreme east of island  
"kainuted" name used  
in middle  
part of island.

fls. pale pink

"mazeri" or "mathei"

flowers purple "gilij"

leaves used to make a delicious soup.

flowers green "chobchob" tuber  
starchy called "melkin" (or american) flour  
used for making bread. This learned from Chamorro,  
plant ignored previously.

culms conspicuously  
spreading. "yafon"erect "bel" used for weaving  
small baskets for tobacco, etc.

climbing on bushes,

flower purple. "dodai"

shrub 3 m. tall,

bracts white, flowers

bright orange-yellow;

fruit almost globose.

shrub 2.5 m. tall,

flowers yellowish green.

low tree, flowers yellow.

"ngale" inner bark used to make rope,

to make outer ornament of loincloth; young

wood resilient, so used for frame of fish nets, also floats,  
wood split and used for ribs of boats,  
doesn't rot easily.

spreading tufts "chijal" or  
"chijal"

"lan" "lan ni noni"

erect shrub 1-2.5 m. tall

"azbiloi"

"ngimol"  
firewood

40 m



1946 Caroline Is.

July 13 - Yap, Yap I.  
small peninsula in  
harbor, old Shinto temple  
grounds.

25561

*Zaysia matrella* (L.) Merr.

abundant ~~in the~~  
just above water

62

*Eugenia*

63

*Ficus macrophylla*  
planted around grounds

#

same <sup>lower</sup> slopes of Mt. Matade  
just above town  
thick bushy second growth  
forest.

64

*Eugenia Decaspermum fruticosum* Forst.  
common

65

*Tectaria*

occasional in deep shade

66

*Polypodium scolopendrium*  
common

67

*Morinda citrifolia*  
occasional

68

*Eugenia Decaspermum fruticosum* Forst.  
common

Yap Is.

forming a dense turf

Tree 5 m. tall

— flowers white, fruit green.  
Tree 5 m. tall, stipules  
pink; sterile.

shrub ~~2.5~~ 3 m. tall,  
~~fls~~ fruit bright black  
when ripe.  
rhizome short, erect.

fronds erect, rhizome  
creeping, light green.  
— small tree 3 m. tall,  
flower white, fruit white,  
translucent.

shrub 3 m. tall, flowers  
white to pinkish;  
fruit immature

- 25569 *Allophylus*  
common along trail
- 70 *Clerodendrum* <sup>rum</sup> ~~in~~ *inermis*  
occasional
- 71 *Glochidion*  
common
- 72  
rare
- 73 *Polyscias grandifolia* Volk.  
common
- 74  
very common in openings
- 75 *Wedelia biflora*  
common along trail
- 76 *Polyscias grandifolia* Volk.  
common (probably same as #25573)
- 77 *Pongium edule* Reinw.  
occasional

yap

- semi-scandent  
shrub; flowers white;  
fruit immature.
- semi-scandent  
shrub, flowers white  
with purple stamens  
and pistil.
- small tree; flowers  
yellow.
- Tree 10 m. tall, with  
~~the~~ a general rusty  
appearance, flowers  
pale green.
- shrub 2 m. tall
- shrub 2-3 m. tall,  
flowers pink.
- scandent herb,  
flowers yellow.
- shrub 3 m. tall, fruit  
immature, inflorescence  
terminal, compound
- Tree 15 m. tall; fruit  
brown, broadly ellipsoid,  
not quite mature,  
inside pulpy with  
radially arranged rows  
of large seeds. These  
smelling of bitter almonds



25578 *Inocarpus fagifera* (Park.) Forst.  
common

79  
epiphytic on tree trunks

80 *Dryopteris*  
common in openings along trail

81 *Fimbristylis*  
along trail, rare

82  
in trail

83 *Glumella trifolia*  
in bushy woods

84 *Glochidion*  
common in woods

85 *Rhus*  
~~can~~ occasional

86 *Columella trifolia*  
bushy roadside

tree 10 m. tall (others much taller), beginning to have buttresses; fruit lenticular, roasted in shell or boiled out of it for food. an important food here

leaves fleshy - coriaceous; flowers bright yellow; fruit green.

flowers pale violet.

wine climbing in bush, fruits deep purple, juicy rather bitter-acid. small tree, flowers yellow.

small tree, somewhat lactiferous.

wine climbing over bushes, flowers green.

1946

Caroline Is.

July 14 - Maki, north end  
of Tomil-gagil I.  
slightly higher ground in  
and around mangrove swamp.

25587

common

88

common locally

89

common

90

91 *Randia cochinchinensis*92 *Callicarpa*

rare

93 *Cynometra*

common locally

94 *Scleria*

common locally

95 *Hedyotis*

along trail

July 14 - high ground  
s. w. of Maki

Tomil-gagil I.

badly eroded red volcanic  
soil, covered with manganese  
nodules.

Yap Is.

tree about 5 m. tall (others  
quite large).  
caespitose, leaves plicate,  
culms ascending.  
tree 5 m. tall (others  
much larger) flowers  
green.  
shrub, bud white

slender tree 6 m. tall,  
fruit immature.  
shrub 1 m. tall,  
flowers purple.  
tree 8 m. tall, fruit  
immature.  
culms about 1 m. tall

shrub 1 m. tall, flowers  
purple.

vegetation low,  
principally *Gleichenia*,  
with clumps of sedge,  
various shrubs, *Pandanus*,  
and *Lycopodium cernuum*



25596 *Lycopodium cernuum* L.  
common, subdominant locally.

97 *Myrtella benigseniana* (Vahl.) Diels  
common, one of dominant shrubs

98 *Rynchospora*  
common

99 *Delaginella*  
common sheltered by bushes

25600 *Eugenia*  
common

01 *Nepenthes*  
common

02 *Hedyotis*  
common

03  
common, subdominant  
in places

04 *Rynchospora*  
in old roadway, very local

05  
common

06 *Fimbristylis schoenoides* var. *folnea* (Kuhn) Forb.  
occasional

07

common

08 *Spathoglottis*  
rare

25605 a *Glaichenia linearis*

spreading by stolons

shrub 0.8 m. tall,  
flowers white, mostly  
sterile at this season.

caespitose, some heads  
viviparous.

dwarfed, 1 m. or less tall,  
petals white, stamens pink.

dwarfed, 2-4 dm. tall,  
flowers purplish-maroon.

dwarfed; flowers  
purple.

shrub up to 1 m. tall,  
leaves glossy, flowers  
white.

caespitose

shrub 0.6 m. tall.

flowers pale pink  
caespitose

caespitose

terrestrial  
flowers white

25609

- occasional  
 10 *Timonius*  
 rare in brush (more  
 common in woods nearby)  
 11 *Premna obtusifolia* R. Br. (pointed lvs.)  
 rare

July 14 - w. side of head of  
 n.e. bay on Tornil-Gagil I.  
 built up stone trail in  
 mangrove swamp. 1 m.

- 12 *Pteris*  
 common locally

July 14 plateau west of  
 Gatschapar and north of Ma.  
 Tornil-Gagil I.  
 eroded volcanic soil  
 with *Gleichenia*, brush  
 and *Pandanus*, these abundant.

- 13  
 in old roadbed

- 14  
 scattered

- 15 *Timonius*  
 scattered

- 15a *Spathoglottis*  
 rare

Yap Is.

- shrub 1 m. tall,  
 flowers greenish-yellow.  
 - shrub 1.5 m. tall  
 (tree in wooded ravine)  
 - fruit immature; flowers white  
 shrub 1 m. tall,  
 flowers pale green,  
 ripe fruit purple-black.

erect from a buried  
 horizontal rhizome.

- herb from strong root crown.  
 - flowers lavender.  
 - bush 2.5 m. tall, fruit  
 deep blue-black.  
 - bush 1.5 m. tall,  
 flowers white  
 - flower white



July 14 just north of Ma,  
Tomil-Gagil I.

25616 edge of mangrove swamp  
*Scyphiphora hydrophyllacea*  
common

July 14 between Ma and  
Maerur, Tomil-Gagil I.  
roadside thickets

17 *Polyscias*

18. *Chizostachyum luma* (Blas.) Merr. or near  
common det. McClure

18a *Bambusa vulgaris* Schrad. ex Wendl.

Our visit to Yap was  
scarcely long enough  
to enable us to get any  
picture of the vegetation.

The island, as far as  
seen, is fairly well  
fringed by mangrove  
swamp with *Rhizophora*,  
*Bruguiera*, *Scyphiphora*,  
etc. Just above this is  
forest with *Cynometra*,  
25587, 25589. Most of the  
vegetation, if not all,  
above the mangroves, is

shrub 1 m. tall,  
flowers pink.

erect shrub 2 m. tall,  
panicle red, fruits  
blue.

close clump, canes  
mostly slender.

secondary. The greater  
part of the substratum  
is soil weathered from  
a green "amphibolite" schist.  
A strip of volcanic soil,  
deeply weathered, runs  
northward across the  
middle of Tomil-Gagil I.  
Rumung is said to be  
granitic.

Where burning has  
not been excessive the  
second growth is of dense  
wet thickets of *Calophyllum*,

1946

## Caroline Is.

undergrowth  
of brush with  
Nepenthes,  
ferns,  
etc.

*Nocarpus*,  
*Engenia*, *Maia ranga*,  
*Morinda*, *Glochidion*, etc.  
The more gently sloping  
lowland areas are covered  
by coconuts, breadfruit,  
*Nocarpus*, *Mangifera*, *Pandanus*, etc.  
Patches of *Cyrtosperma* are  
in ~~places~~ found here  
and there, raised for food.  
The population is quite  
sparse, but judging  
from the old house platforms,  
tumble-down huts, etc.,  
must once have been much  
greater.

In areas that have  
been much burned over  
there is developed a  
manifestation of the  
grassland vegetation such  
as that found on the  
volcanic soil of Guam,  
but with *Miscanthus*  
conspicuously absent.  
The capitate *Rynchospora*,  
*Tacca*, *Cyperus* sp., *Gleichenia*,  
*Lycopodium cornutum*,

## Yap Is.

*Lycopodium scandens*,  
a *Scleria*, ~~the~~ the erect  
*Fimbristylis*, and one  
or two grasses characterize  
this near the top of Mt.  
Matade. For the south  
end of Yap, see H. S. S. S.  
notes. Two species of  
*Nepenthes* are found  
there, one a dwarfed  
form of the one common  
in the thickets.

On Tornil-Gagil, on the  
strip of volcanic soil  
mentioned above, this  
vegetation is very well  
developed, forming an  
extensive savanna-like  
formation, with *Gleichenia*  
dominant usually, with  
*Lycopodium cornutum*, and  
25597, very common,  
*Nepenthes*, *Rynchospora*,  
*Fimbristylis* 2 sp., 25607,  
25603, 25605 and various  
other shrubs common  
locally; *Pandanus*  
*tectorius* in places is



1946

## Caroline Is.

so abundant as to give a definite aspect to the landscape. The Nepenthes is the same as that common in the thickets below, but very dwarfed. Where in the thickets it may be 3-4 m. long, here it is 2-4 dm. but the parts are about the same size.

Although there is no way to prove it, it seems probable that this vegetation here also is the result of excessive burning over a long period of time. Several fresh burns were noted, and the Pandanus in places showed the effect of fire. The soil is very seriously eroded and is in places only protected by a pavement of mangrove nodules. It seems to be too sterile

## Yap Is.

now to support more than a thin vegetation. The *Fleischeria* acts as some protection where it is thick. The subsoil seems to be rather deep in most places. No top soil exists any longer in most places.

On the (granitic) soils of Rumung is said to be an extensive savanna. This is likely of the same character, but was not visited.

Various cultivated trees and shrubs are found throughout the lowlands, persisting either from the Japanese or native occupation of the land (probably the former). Most are ornamentals.

1946 Caroline Is.

July 17 - from ship  
going from Pelilieu to Koror

Pelilieu - natural vegetation  
completely destroyed except  
a strip along s.e. coast.  
Vines now cover Bloody nose  
Ridge and skeletons of trees  
on other parts.

Ngabad I. - slightly raised  
coral - wooded, flat.

Ngarsensul I. - same.

Gorokottan I. - same.

Ngarklim I. - same.

Eil Malk - high coral  
with steep sides, whole  
s. side, at least, undercut  
except one tiny beach west  
of middle. All densely  
wooded. Small islands  
surrounding it same.  
Palms visible on ridge.  
Much Pandanus on lower slopes.  
No habitations visible or any  
sign of human activity.

another  
beach on west

Palau

H.O. chart 6102 31  
Ed. 1. Apr. 1944

Cluster of islands due  
west of Eil Malk much  
the same but with more  
beaches and some flats  
just above sea level on  
s. side. Second cluster west  
apparently same.

On Eil Malk *Bilbilia*  
is very abundant. Also  
on some of the small islets  
what appears to be a *Dracaena*.  
Many beaches on west  
side of Eil Malk.

gaiangan  
see p. 72  
(gianyasan)

Good beach <sup>island south of</sup> on south point  
of Urukthapel I. and several  
to west of it <sup>on Urukthapel</sup>. Also one  
on small islet between  
Eil Malk and Urukthapel  
in Yoo Passage.  
Some low flat land on  
islet south of s. point of  
Urukthapel.

~~that~~ The west arm of  
Urukthapel, Gamudokra,  
Apurashokorn and  
Rattakodokorn Islands are  
essentially similar to Eil Malk.



1946

## Caroline Is.

All are very densely wooded except on absolutely perpendicular cliffs.

One small beach near north west point of Yamudoko - also peculiar Pandanus thicket on point.

The myriad of small islets within the arms of Urukthapel seem to be much the same. Perpendicular sides are common, undercut at base. Beaches are few.

In Malakal Harbor is the line between the ~~coral~~ raised coral and volcanic regions. <sup>Koror and Malakal</sup> The ~~southern~~ <sup>islands to the north</sup> of the ~~islands to the north~~ <sup>are volcanic</sup> of it are coral, but most are volcanic. The two can be readily distinguished by the difference in contour. The volcanic slopes are about  $30^\circ$  from horizontal while those of the coral are from vertical to about  $70^\circ$  from horizontal.

## Palau

Arakabesan is ~~mostly~~ volcanic, largely grass-land, some forest on west side, esp. on n.w. slope.

Ngurur is broken woods, ~~appears to be low coral~~ apparently tuff.

Eomogan, w.s.w. of Eil Malk, has good beaches and some flat land, as well as steep coral mts. It has apparently suffered extensively from bombardment. It is connected by a sand spit which may be awash at low tide with Abappaomogan, which has a small sandy peninsula but which is surrounded on the s.w. exposure, at least, by perpendicular cliffs.

On the e. part of Urukthapel, probably at Ngaramedin Pt., is a planting of coconuts on some flat land at the base of the cliffs.

1946 ~~Palau~~ Caroline Is.

July 13 - W. end of  
Arakabesan I. 1-20 m.  
volcanic breccia and  
soil derived from it; weedy  
open ground and  
secondary woods and thickets.

25019

*Hedyotis*

steep slope with grass  
and thickets

20 *Tacca*

in openings on steep slope

21

*Ixora carolinensis* cathartica  
common in woods

22

common in undergrowth  
in woods.

23

*Glochidion*

common in woods  
and thickets

24

*Allophylus*

occasional in thickets

25

*Fcleria*

common in wet places  
just above  
sea level

26

*Canavalia* cathartica Thouras  
local, just above  
sea level.

Palau

tangled shrub 1.5 m.

tall, stems green;

flowers white.

herb 2 m. tall, flowers  
green, bracts blackish.

shrub 2 m. tall,

flowers vermillion

herb 2-3 m. tall,

fruits orange when ripe.

tree 10 m. tall, 2 dm.

thick, flowers reddish

green. leaves on

upper part of tree

larger than those

on lower shaded branches.

semi-scandent shrub,

flowers white.

herb 1 m. or more

tall.

great vine covering  
everything, flowers  
rose pink.



1946 Caroline Is.

- 25627 *Premna obtusifolia* A. Br. (Winters L.)  
common in woods and thickets
- 28 *Maristima*  
common just above sea level at top of beach and along road
- 29 *Macaranga*  
common in woods and thickets, one of dominant plants
- 30 *Timonius*  
rare in woods
- 31 *Centotheca latifolia*  
common in woods
- 32 *Lygodium circinnatum*  
occasional in woods
- 33 *Cheilanthes*  
occasional in open places, especially on rocks
- 34 *Lcleria*  
in woods, common
- 35 *Callicarpa*  
rare in edges of thickets on slopes
- 36  
common in thickets on steep slopes

Palau

- small tree 4 m. tall, aromatic when broken; flowers green, aromatic; ripe fruit blue. prostrate, branches ascending.
- 5 m. small tree 5 m. tall  
♀
- 5 m. small tree 4 m. tall, fruit immature
- 8 m. caespitose, recumbent
- 8 m. ~~small~~ prostrate vine-like, twining around trees, pinnae demorphic, fertile ones rare.
- 5 m.
- 8 m. loosely caespitose in small tufts.
- 10 m. erect shrub 2 m. tall, flowers rose purple.
- 10 m. shrub 1.5 m. tall, flowers pinkish white

- 25637 *Scleria*  
scattered in deep grass <sup>on steep slope</sup>
- 38 *Lycopodium cernuum*  
in openings on steep slope
- 39 *Nepenthes*  
in small thickets
- 40 *Colubrina asiatica*  
~~shrub~~ in thickets
- 41 ~~Eugenia~~ *Decaspermum fruticosum* Forst.  
common in brush
- 42 *Callicarpa*  
occasional in thickets
- 43 *Jussiaea*  
common in open about wet places
- 44 *Tephrosia*  
common in open places
- 45 *Polygala*  
common in open disturbed places
- 46 *Fimbristylis*  
occasional in open
- 47  
rare on rock faces
- 47 ~~Miscanthus~~ *Saccharum spontaneum*  
common on rocks
- 49 *Euphorbia*  
open places

- solitary culms  
10 m. 1 - 1.5 m. tall.  
supported on grass
- 10 m. vine-like, ascending  
through brush, leaves  
acting as tendrils, stems  
very tough.
- 5 m. slender shrub,  
flowers yellow.
- 2 m. shrub 3 m. tall,  
ripe fruit black.
- slender shrub 2 m. tall,  
3 m. fruit light purple.
- 1-2 m. suffrutescent herb  
↓ 1.5 m. tall, petals  
yellow, 1 cm. long,  
scarcely emarginate.  
herbs 1 m. tall,  
flowers whitish.  
flowers white
- caespitose
- fls. pale lavender to white
- Thickets 2 m. tall
- herb up to 0.3 m. tall,  
flowers white.



- 225650 *Desmodium*  
common, especially around  
bases of cliffs
- 51 *Pityrogramma calomelanos*  
rare on rock cliffs
- 52 *Pteris*  
common on rock cliffs
- 53 *Euphorbia*  
common on flat open  
ground
- 54 *Passiflora foetida*  
occasional in open  
and thickets
- 55 *Stachytarpheta*  
common in open places
- 56 *Ischaemum*  
abundant in open places
- 57 *Paspalum vaginatum*  
abundant on flats  
near sea
- 58 *Centella asiatica*  
common
- 59 *Averrhoa belembi* L.  
occasional in thickets
- 60 *Polyscias*  
occasional in thickets

225657a *Dryopteris zippelii*

## Palau

shrub 1 m. tall,  
flowers purple.

fronds <sup>very</sup> pale yellow  
powdery beneath

very prostrate

vine flowers white  
with corona segments  
purple in basal half.  
— suffrutescent herb  
1 m. tall, flowers deep  
purple.

— vine-like, elongate  
prostrate, forming mats.

prostrate, rooting  
— at nodes  
small tree 5 m. tall,  
cauliflorous, flowers  
from pulvini, purple,  
— fruit very immature  
shrub 3 m. tall, flowers  
coral red, leaves 3 parted,  
doubly compound, fruit green.

1946

Caroline Is.

- 25661 *Cyclophorus*  
epiphytic on tree trunk, abundant
- 62 *Taeniophyllum*  
epiphytic on tree trunk
- 63  
epiphytic on tree trunk
- 64 *Andropogon brevifolius* Sw  
on talus at foot of  
rock cliff, common  
locally
- 65 *Albizia carpinifolia* var. *vaginalis*  
common on open flats
- 66 *Dendrocalamus forbesii* Ridley or near det. F. A. McClure  
common in thickets
- 67 *Pandanus*  
common in thickets on  
steep slopes
- 68 *Flacourtia rukam*  
common on rocky slopes
- 69 *Derris*  
common in thickets  
on rocky slopes
- 70 *Hedyotis*  
rare in edges of thickets  
on rocky slopes

Palau

- fronds ~~glabrous~~ coriaceous
- roots flat, bright green,  
buds green.
- densely caespitose,  
flowers red.
- 4m — small tufts,  
culms weak
- 7m. — very prostrate, large  
clumps flowers dull purplish,  
forming dense clumps  
of slender canes,  
leaves conspicuously  
broad, young canes  
hispid, sheaths hispid
- shrub 3-4 m. tall,  
ripe fruit orange,  
leaves spirally  
arranged.
- 5m. — small tree 4 m. tall,  
fruit immature
- sterile vine, leaves  
thin - coriaceous,  
reddish when young.
- 3m. — suffrutescent herb,  
tangled, flowers white,



1946 Caroline Is.

July 19 Gammiscan  
 Gammiscan River, <sup>central</sup> abeldao  
 grassy valley surrounded  
 by low hills with  
 small pineapple

25671

*Polygala*

trail in grassy valley  
 floor

72

*Cox lachryma-jobi*

grassy wet valley floor  
 "pa nga me"

73

*Cheilanthes*

eroded area, rare

74

*Ichizaea dichotoma*

in small patch of woods

75

*Dracaena*

occasional on eroded  
 hill in thickets and open

76

edge of thicket on eroded hill

77

common on eroded area

78

*Rynchospora*

common on eroded area

79

*Lycopodium cernuum*

very common on eroded  
 area, in some places subdominant

Palau

0-50 m.

plantations, patches  
 of woods and eroded  
 areas, the soil red clay  
~~and~~ filled with  
 thin, dike-like concretions.  
 flowers white

branching herb  
 2 m. tall young fruits  
 yellow, then turning  
 black, then pearl gray

rhizome very deeply  
 buried.  
 sparsely branched tree  
 6 m. tall, only old  
 dried inflorescences available.  
 shrub 1.5 m. tall,  
 fruit green but dehiscent.  
 caespitose,

small tufts.

spreading by arching  
 stolons.

25680

common on eroded area

81 *Pteris*rare on eroded ~~area~~ slopes82 *Phyllanthus*

common on eroded area

83 *Panicum*

common on eroded slopes

84 *Drosera*rare on bare eroded earth  
outcrops85 *Cyathea*common in thickets  
above cultivated fields86 *Blechnum orientale* L.  
very common ~~in grass~~ generally87 *Myrsine*~~scarce~~ rare in thickets

88

common in thickets and  
eroded area

89

occasional in thickets

dwarfed bushes 2-4 dm.  
tall, flowers pale pink  
to white.

rhizomes buried.

shrub 1-2 m. tall,  
— sparsely or not branched.  
small loose tufts.sessile rosettes, glandular  
hairs brick red; flower  
buds pink.stem very short,  
lower pinnae deflexed,  
~~leaf~~ pinna tips and  
— margins curved downward.rosettes with very  
short erect rhizome,  
fronds ascending, sterile  
ones crinkled a little.small tree 4 m. tall,  
densely branched,  
— mature fruit rare, deep purple.small tree 4 m. tall,  
(in eroded places much  
smaller) flowers white.— small tree 5 m. tall,  
in bud only



25690

- common in thickets
- 91 *Ixora carolinensis* Cassi Hance  
occasional in thickets
- 92 *Gleichenia linearis* var. <sup>pauciflora</sup>  
very abundant, dominant  
in eroded and disturbed  
areas
- 93 *Morinda pedunculata*  
common in thickets and  
occasional in open.
- 94 *Lygodium scandens*  
weed in pineapple patch,  
common everywhere
- 95 *Coffea arabica*  
around old settlement
- 96 *Antirrhinum*  
persisting around old  
japanese settlement.
- 97  
rare on slope along trail
- 98 *Wikstroemia elliptica*  
common on slopes at  
edges of thickets

small rounded tree

- erect shrub 2-3 m.  
Tall, flowers vermillion,  
thyrses red; fruit green.  
forming tangles  
up to 1 m. deep, much  
lower on sterile eroded  
places.
- erect tree-like shrub  
3 m. Tall, flowers  
gray-blue, fruit green.  
twining; rhizome  
buried.

tree 6 m. tall; flowers  
rare, white, only one seen  
pentamerous, fruit  
mostly green, ripe  
ones red.

flowers deep purple  
with white palate.

loose tufts, recumbent.

shrubs 1-2 m. tall,  
bark tough; flowers green,  
ripe fruit red.

1946 Caroline Is.

- 25699 *Dianella*  
occasional at edges  
of thickets and on open slopes
- 25700 *Pandanus*  
common in thickets and  
on eroded area
- 01 *Nepenthes*  
common on eroded area
- 02 *Cladium*  
common on eroded area
- 03 *Eugenia* *Decaspermum fruticosum* Forst.  
common in thickets  
and on eroded area
- 04  
common in thickets and  
on eroded area
- 05 *Hedyotis*  
very common and  
characteristic on  
eroded area
- 06 *Commersonia bartramia* (L.) Merr.  
occasional in thickets
- 07 *Spathoglottis*  
rare in eroded area
- 08 *Alternanthera versicolor*  
in deep grass near river

Palau

- caespitose, stems about  
1-1.5 m. tall; flowers  
sky blue just toward lavender.  
fruit dark blue, rare.
- erect, bushy, 1-2 m.  
tall, fruit green.
- dwarfed 3-5 dm. long  
flowers maroon.  
caespitose
- shrub 2 m. tall, flowers  
white with pinkish  
stamens; ripe fruit black.
- small dense tree  
5 m. tall; fruit  
pale green.
- erect scarcely branched  
shrubs 1-2 m. tall,  
thyrses and hypanthium  
purple, calyx lobes  
white with purple tips;  
corolla purple.
- shrub 2 m. tall;  
flowers white.
- flowers white.
- ascending weak stems



25709

*Passiflora quadrangularis*  
in thickets near river edge

10

occasional on grassy river bank

11

rare in weedy places

12

*Maranta*

common along river banks  
in thickets

13

common in river bank thickets

14

*Davallia solida*

on old stump

15

*Uncaria korrorense*

common in thickets

16

*Ananas comosus* (L.) Merr.

considerable patches,  
evidently planted by Japanese  
for canning.

17

*Ananas comosus* (L.) Merr.

small patches, possibly  
planted by Japanese for canning

large herbaceous vine,  
fruit 2 dm. long or more  
when ripe, <sup>dull</sup> salmon-color  
outside, flesh more or  
less watery tasting, pulp  
around seeds delicious  
flavored, sweet-sour, juicy.  
shrub 1 m. tall, flowers  
white.

herb 1-1.5 m. tall, flowers  
white.

tree up to 3 m. tall, flowers  
yellow with reddish mottling  
in petals. calyx paler.  
rhizome creeping on old stump

scandent shrub forming  
tangles; flowers pinkish yellow.  
fruit reddish

"Smooth Cayenne"

fruit in abandoned patches  
quite small, about 1 dm. long or less  
sweet and juicy.

"Wild Kailua?" fruit  
rather small, 1-1.5 dm. long.  
sweet, fairly juicy.

25713

*Vitex*

in thicket near river,  
possibly planted

19

*Acrostichum aureum*

in edge of river (but  
considerably above mangroves)

20

*Glochidion*

thickets along river banks

21

thickets along river banks

22

*Ficus aspera*

thickets along river

23

*Barringtonia racemosa*

thickets along river

24

*Paspalum*

open flat grassy wet land

tree 9 m. tall, flowers  
violet.

erect clumps 1 m. tall.

tree 7 m. tall, fls. greenish  
red.

small tree, leaves  
pale and reticulate  
beneath, latex white  
but very soon turning  
black; flowers white.

"tough" <sup>it</sup> said to be  
extremely poisonous  
to skin.

small tree 5 m. tall,  
figs on trunk and larger  
branches, rarely on twigs,  
brownish green, becoming  
lighter and greener when  
ripen.

small tree, leaves  
large, inflorescence  
long pendent, flowers  
rose color.

culms almost erect,  
fruits dark brown



1946 Caroline Is.

- 25725 *Ischaemum*  
common on low flat open wet land
- 26 *Ischaemum*  
common on low flat open wet land
- 27 *Trema*  
occasional in thickets

July 20 - banks of river  
below Aramiscan,

Babeldaob

0 m.

- 28 dense riparian forest with  
muddy soil, a few mangrove  
formation species present
- epiphytic on tree trunk

- 29 *Freycinetia*  
common climbing on tree  
trunks, ~~mostly~~
- 30 *Psilotum complanatum*  
occasional on tree trunks

- 31 *Pterocarpus*  
occasional

- 32  
occasional

3

Palau

tangled

tangled

slender shrub 3 m. tall,  
flowers yellowish green,  
ripe fruit pink.

epiphytes on relatively  
few trees, but usually  
abundant there.

vine several m. long,  
dying at back; leaves  
fleshy, roots long, tough,  
whitish; buds and fruits.  
liana many m. long,  
mostly sterile.

pendent, weak, as much  
as 1 m. long, lower stems  
sharply 3 angled, upper  
branches thin, flat, smooth.  
tree 12 m. tall, flowers  
yellow (out of reach).  
tall tree; fruit green.

1946 Caroline Is.

25733 *Ophioglossum pendulum* L.  
occasional, epiphytic on  
tree trunks.

34 *Nephrolepis*  
semi-terrestrial in old logs  
and between them

35 *Lamadera indica* Gaertn.  
dominant tree at edge of river

butresses becoming very numerous  
and intricate as roots spread out,  
serving as pneumatophores.

36 *Davallia solida*  
epiphytic on tree trunks,  
common

37 *Humata*  
common, epiphytic on tree trunks

38  
common, epiphytic on tree trunks

39 *Derris trifoliata*  
common about bases of trees

40 *Aberonia*  
very rare, on fallen log

41 *Vittaria*  
occasional on tree trunks

(ctd. on p. 62)

Palau

fronds weak, flaccid,  
pendent.

more or less erect

tree up to 12 m. tall, with  
buttressed trunk; umbels  
pendent on slender peduncle,  
flowers coral red, petals  
and sepals falling very  
readily.

frond leathery

rhizome with licorice odor.

extensive woody vine,  
racemes for back on  
bare part of vines, leaves  
on branchlets near tips  
of vines; <sup>older</sup> buds pink.  
flowers pale greenish  
yellow.



1946 Caroline Is.

The Garamiscan River, Babeldaob, is formed at Garamiscan by the joining of 2 streams. Tidal influence is felt up to this point.

The riparian forest along the banks starts just above the union of the two streams.

Here *Acrostichum aureum* and *Barringtonia racemosa* are the only typical mangrove swamp species.

The commonest tree is #25713. Below Garamiscan the river meanders between low marshy banks.

*Nipa* appears. #25735 becomes the dominant tree. *Bruguiera* appears but is rare.

Gradually the river widens. The banks are full of various types of pneumatophores as various other mangrove swamp species come in. *Rhizophora* appears. *Nipa*

River banks  
so close that  
river is  
shaded.

Palau

has become very common, lining the shore in places. Where the river is wide enough so sunlight is always available. *Nipa* drops out and *Rhizophora*, which has been minor, becomes dominant along the edges. *Sonneratia*, *Bruguiera*, and *Xylocarpus* are mixed with it. Meanders here occasionally penetrate to bases of hills.

*Sonneratia* is rare here but becomes more common seaward.

It is hard to say whether sunlight or salinity is the controlling factor in determining the abundance and relative abundance of these plants.

The distribution of epiphytes is very queer. Few trees have any (except *Davallia*) but those that do, have a great

1944 Caroline Is.

display of them. They become  
rare as the open bay is  
approached. Most conspicuous  
is a ~~so~~ *Nephrolepis*,  
likely #25774, which forms  
great masses on the rare  
trees where it occurs. A

number of other ferns  
*Lycopodium* sp., *Psilotum*,  
*Ophioglossum pendulum*,  
~~and~~ a number of orchids and  
several mosses also are present.

As the bay is reached  
*Sonneratia* takes over in  
most places complete  
dominance.

25742

common locally on tree trunks

43 *Hymenophyllum polyanthos*  
common locally on tree  
trunks,

44 *Cynometra*  
common locally

45 *...*  
common, epiphytic on tree trunks

Palau

A peculiar thing is  
*Freycinetia* growing  
at this level. It is  
rare where the river is  
wide but common  
where it is shaded.

Tall forest does not  
quite reach the bay.  
A belt of low forest  
of *Rhizophora* and *Sonneratia*  
lines the bay.

forming dense mats.

tree with drooping  
branches.

pendent, flowers cream  
color.



1946

Caroline Is.

25746

common on <sup>mossy</sup> tree trunks47 *Lycopodium phlegmaria*  
occasional on mossy tree trunks48 *Acanthus ilicifolius*  
patches at edge of water,  
partially submerged at  
high tide.49 *Centotheca lappacea* (L.) Desv.~~edge of~~ opening in swamp50 *Schefflera odorata* (Blanco) Merr. & Rolfe  
common, mostly in canopy51 *Torenia*  
one ~~plant~~ <sup>patch</sup> seen in mud  
in opening in swamp.52 *Agrostophyllum*  
on mossy tree trunks53 *Paspalum conjugatum*  
dense solid stand on built-up  
roadway running out  
into swamp to river.54 *Spathoglottis*  
common on built-up ground  
along roadway in swamp55 *Eugenia Decaspermum fruticosum* Forst.  
rare at edge of swamp56 *Portulaca*  
occasional in edges of swamp

Palau

pendent, very brittle.

suffrutescent herb;  
flowers white.

loose tuft.

liana, fruit orange.

sterile and fruiting plants  
only seen.

flower white, fruit black.

shrub 2.5 m. tall, flowers  
white with purple stamens.  
herb up to 3 m. tall, unbranched,  
leaves in a ~~compress~~ <sup>old</sup> ~~spiral~~ <sup>young</sup> ~~plane~~  
spiral plane; calyx red, <sup>green</sup>  
corolla and stamens white.

1946 Caroline Is.

- 25757 *Fuirena*  
in mud in opening in swamp

July 20 - low hills south  
of Garamiscan River,

Babeldaob 1-15 m.  
<sup>abandoned</sup>  
around ~~old~~ papuan settlement,  
overgrown with deep grass  
and weeds, *Paspalum conjugatum* <sup>dominant</sup>

- 58 *Manihot esculenta* <sup>Crantz</sup>  
abandoned patch, formerly  
cultivated generally,  
still largely persisting

- 59 *Carica papaya*  
around houses (not  
generally distributed  
as a weed here).

- 60 *Allamanda cathartica* <sup>var. *headersonii*</sup>  
<sup>(Pell.) Bailey & R. Hoff.</sup>  
persisting around houses

- 61  
disease on *Ipomoea batatas*  
fairly general here

- 62 *Ipomoea batatas*  
persisting from cultivation

Palau

tufts, culms erect.

Various cultivated species  
persisting here - *Hibiscus* hybrids,  
*Persea americana*, etc. + those collected.

erect shrub with  
tuberous elongate roots,  
stem branched near  
top, very knobby;  
flowers greenish, fruit  
immature.

erect single stem  
2 m. tall, flowers  
white.

wine forming patches,  
flowers bright yellow,  
reddish <sup>tinged</sup> without.

stems erect, leaves  
dwarfed and distorted.

sterile.



1946 Caroline Is.

- 25763 Piper betle  
edge of thicket on steep slope
- 64 Dryopteris  
wet shaded place
- 65  
abundant everywhere
- 66 Uncaria kororensis  
common in second growth  
thickets

July 21 - ~~fast~~ west end  
of Arakabesan Island  
near seashore, cleared land

- 67 Calophyllum inophyllum  
<sup>common</sup>
- 68 Terminalia catappa  
common

July 21 east slope near  
causeway to Koror,  
Arakabesan Island

- 69 Mussaenda frondosa  
occasional in second  
growth bush

25769a see next p.

Palau

- vine climbing in trees,  
leaves mildly acid to  
Taste; ripe spikes red.
- rhizome short, erect;  
fronds erect & ascending
- great liana covering  
trees; only a few shattered  
dry fruits seen at this season.  
(leaves often much larger)
- scandent shrub,  
clambering in bushes;  
flowers greenish yellow  
to dull reddish yellow.

tree 10 m. tall  
young tree 3 m. tall (others  
up to 15 m. tall), all  
seen sterile.

shrub 3 m. tall,  
enlarged calyx lobes  
white, flowers bright  
yellow, fruit immature.

1944 Caroline Is.

July 22 - Bog Ngarmid,  
Koror

planted around old Temple grounds

25770

*Serianthes*

71

*Eugenia Decaspermum fruticosum* Forst.

72

H

July 21 - e. end Arakabesan I.

25769a

*Jatropha gossypifolia*  
roadside in rather low  
ground, common but only seen here.

tree 10 m. tall.

small tree, slender, 4 m. tall,  
flowers white with  
rose stamens.spreading tree 8 m. tall,  
fls. dull lavender."olifgash" locally  
used for making string.bush 1.5 m. tall, leaves  
and young growth purplish,  
glandular hairs green;  
flowers red; fruit immature



July 23-24 — Ngeanges  
 island (Gaiangas I.), in Yoo  
 Passage just west of point of Umkithapel I.  
 sandy flat covered by dense  
 low bushy second growth forest

- 25772 *Alocasia*  
 persisting in sandy  
 flats
- 73 *Carica papaya*  
 weed common on flats and  
 on raised limestone
- 74 *Crataeva speciosa*  
 persisting on sandy flat
- 75 *Ipomoea gracilis*  
 rare on sand flat in openings  
 near shore
- 76 *Vigna marina*  
 very common along  
 shore
- 77 *Terminalia*  
 common along beaches
- 78 *Lophora tomentosa*  
 common along leeward beach

Island composed of two  
 limestone pyramids about  
 40m. high connected by a  
 strip of coral sand.

"pise" root eaten, petiole  
 will irritate skin if  
 crushed and rubbed on.  
 erect stem 3 m. tall  
 flowers cream white

small sterile tree 2 m. tall,  
 rank odor when broken;  
 "adepsun" fruit cooked and  
 eaten.

vine, flowers bright  
 purple, "toro" leaves eaten.  
 vine, extensively  
 creeping, climbing  
 in low bushes, ~~the~~  
 "keldel" used  
 medicinally.

small bush, but  
 reaching small tree size.  
 "esemi" used medicinally.  
 "dudurs" used medicinally.  
 bush 2 m. tall,  
 flowers yellow.

25779 *Barringtonia*  
only one plant seen

30  
only one small seedling seen.

31 *Caesalpinia Gonduc* (L.) Roxb.  
rare in bush

32 *Hernandia*  
common on beaches

33 *Calophyllum inophyllum*  
common

34 *Eugenia*  
common

small seedling; "bdul"  
~~used by~~ leaves eaten  
by women during  
childbirth. Not used  
as fish poison here, but  
said to be in Babeldaob  
and Koror.

"gisaks" used by women  
in childbirth.

"todulik" or "sers megamad"  
"not used".

sterile plant only seen.  
large tree, flowers  
white, fruiting perigon  
inflated turning red-  
purple. "dago" used  
medicinally by  
women during childbirth.

~~bdas~~ "btaes" used  
for medicine. wood  
used to make canoes.

large tree.  
large tree "rebotil"  
fruit eaten. leaves  
used medicinally.  
fruit white or red size  
of small apple. flowers  
greenish-white.



- 25735 *Taeniophyllum*  
rare on trunks of trees
- 86 *Guettarda speciosa*  
rare in forest
- 87 *Scaevola frutescens*  
common along beaches
- 88 *Cassytha filiformis*  
common, parasitic  
on grasses and other things.
- 89 *Messerschmidia argentea*  
common along beaches
- 90 *Nephrolepis*  
very abundant in undergrowth
- 91 *Macaranga*  
uncommon in brush
- 92 *Premna blusfoter* B. & A. (Lour. 1771)  
uncommon in brush
- 93 *Canavalia cathartica* Thunberg  
common everywhere

- roots green, closely flattened  
to bark; flowers white,  
spikes pendent  
"belau" not used.
- tree 6 m. tall, flowers  
white.
- "gorai" used medicinally  
for stomach trouble.  
flowers white with  
purple markings. bush 1  
m. tall, rounded.
- leafless green or yellow  
vine, flowers white,  
fruit green. "telelaull"
- small tree, leaves  
fleshy silvery green.  
"fatis" ~~not used~~ "viss"
- "terotel" erect from  
short erect rhizome.  
shrub 3 m. tall;
- "bdel" <sup>leaves</sup> used medicinally  
for dysentery.
- "osm" used medicinally  
shrub 3 m. tall, flowers  
pale green, aromatic.
- vine extensively  
climbing in trees  
"beldelel" flowers  
bright purple.

25794 *Ficus* ~~sp.~~  
in small opening, rare.

♀ (95) *Pipturus argenteus*  
♂ (96) common everywhere

97 *Pisonia grandis*  
occasional in forest

98 *Colubrina asiatica*  
common forming tangles  
everywhere

99 *Triumfetta procumbens*  
common on sand at top  
of beaches

25800 *Terminalia catappa*  
occasional.

01 *Piper*

02 *Polyscias grandifolia* Volk.  
common in forest

03 *Artocarpus altilis*  
several large trees in  
brushy woods

shrub 3 m. tall, cauliflorous  
fruits purple when ripe  
sweetish "woa" fruit  
eaten.

"olulgrasus" bark  
used for making string.  
shrubs 1-3 m. tall,  
fruit white, fleshy.  
shattered tree, 10 m. tall,  
trunk 1 m. thick half  
rotten. flowers whitish

fragrant. "mesboebe"  
"drikel" semi-scandent  
shrub, flowers yellow.  
prostrate, flowers yellow.

~~"mike"~~ "mia" leaves  
used medicinally, fruits  
eaten. large sterile tree.

"ksebebi" ~~vine~~  
creeping on ground and  
climbing on tree trunks.

unbranched shrub  
3 m. tall, panicle terminal  
of 2 pseudo-whorls of  
panicles. ~~the~~ "bngai"  
~~and~~ "medu" fruit  
eaten.



25804

rare in forest

05 *Ochrosia oppositifolia*06 *Ficus*  
scattered in forest07 *Eragrostis ~~altissima~~ amabilis*  
one patch seen in clearing08 *Euphorbia hirta*  
one patch seen in clearing09 *Paspalum conjugatum*  
clearings10 *Eleusine indica*  
only one plant seen in clearing11 *Ipomoea alba* L.  
common along beaches12 *Wedelia biflora*  
common along sandy  
leeward beach13 *Cucurbita pepo*  
occasional, persisting from  
cultivation14 *Thuarea involuta*  
common on sand"Élido" large tree,  
one fruit seen."wari" tree 6 m. tall,  
flowers white, fruit  
terete."Eulq" large tree, banyan  
type, sterile.stems erect, arching at  
tips.vine climbing over trees,  
flowers white, opening  
in afternoon, closing in  
morning.

prostrate; flowers yellow.

prostrate vine, flower  
orange; no fruit seen  
leaves with gray spots.prostrate, forming a  
mat, flowering branches  
erect.

- 25815 ~~Ficus~~ *Ficus*  
occasional
- 16 *Cyclophorus*  
common on tree trunks
- 17 *Schefflera odorata* (Blanco) Merr. & Rolfe  
occasional in trees,  
probably epiphytic
- 18 *Lepturus repens*  
common in open
- 19 *Ficus tinctoria*  
occasional
- 20 *Cordia subcordata*  
common
- 21 *Ficus* ~~microcarpa~~ *microcarpa* var. *microcarpa*  
occasional (possibly same as #25815)
- 22 *Randia cochinchinensis*  
common in forest
- 23 *Smilax*  
rare in forest

- sprawling tree, ripe  
fruits dull rose-purple.  
fronds leathery-fleshy
- vine, climbing,  
sharp oily odor when  
broken, flowers greenish  
white.
- creeping, rooting at  
nodes, not especially  
tufted, forming mats.
- shrub growing  
on trunks of another tree;  
ripe fruit dull green.
- tree 10 m. tall, flowers  
bright deep orange.
- large tree, branches  
spreading very low;  
fruits ~~off~~ greenish  
yellow, probably very immature.
- slender tree 6 m. tall,  
ripe fruit red. "ti"
- vine climbing in trees,  
all seen sterile. ~~rhizome~~  
a hard thick irregularly  
branching tuber-like affair.  
reddish within, without  
distinctive odor.



1946 Caroline Is.

25324 *Clerodendron*  
common in undergrowth

25  
common around beaches

26 *Achyranthes aspera*  
top of beach, in sun.

27 *Achyranthes aspera*  
in forest, shaded

28  
common in forest

29 *Pteris*  
occasional in forest on  
sand and rock

30 *Euphorbia* *chamissoi* Boiss.  
common in openings at  
top of beach

31 *Tacca leontopodioides*  
scattered, especially  
in openings.

Palau

shrub up to 2 m. tall,  
flowers scarlet.  
— said to be used medicinally.  
vine climbing into  
small trees; flowers  
green; fruit black and  
glossy when ripe, compressed  
— from top, subglobose.  
low bushy herb.

herb 1.5 m. tall.

shrub 2-3 m. tall,  
flowers pendent, petals  
dull greenish <sup>reddish</sup> yellow  
changing basally to deep  
maroon. appendages  
at base maroon.  
rhizome erect, about 2 dm.  
high, fronds ascending

stems ascending; leaves  
white beneath; flowers  
greenish.

— herbs 1 m. tall (others  
2 m.), fruits blackish.

July 23-24 - same,  
raised dissected limestone  
or "makatea"

25832

occasional just above  
sea on cliffs

33 *Bikkia*

very common on cliffs  
above sea

34 *Pithecellobium*

occasional on cliffs above sea

35 *Hedyotis abrid-punctata*  
common in slight cavities  
and crevices on limestone  
cliffs just above sea

36 *Premna obtusifolia* P. B. (p. 100) (p. 100)  
cliffs just above sea, rare

37 *Capparis*  
cliffs just above sea, common.

38 *Casuarina equisetifolia*  
on cliffs just above sea

plants mostly collected  
on base of cliffs just  
above sea.

pendent shrub

shrub 1-2 m. tall,  
very uniform in leaf  
form, flowers white,  
scarcely fragrant.

shrub, ripe pods  
red inside, seed exerted  
after dehiscence, hanging  
by funiculus.

leaves fleshy, flowers  
white, corolla tube swollen,  
lobe patent, elliptic.

shrub 2 m. tall,  
scarcely aromatic;  
flowers green, one lobe  
white.

shrub 1.5 m. tall, <sup>leaves</sup> slightly  
glaucous, slightly fleshy,  
flowers are open at 9.00 a.m.  
fruit hexagonal in  
cross section.

small tree 4 m. tall



1946 Caroline Is.

- 25839 *Asplenium*  
rare on rocks in shade
- 40 *Asplenium nidus*  
common on rocks in shade
- 41 *Procris pedunculata*  
occasional on rocks in shade
- 42 *Asplenium*  
common on rocks in shade
- 43 *Peperomia*  
common on rocks in shade
- 44 *Tectaria*  
on rocks in shade
- 45 *Cyrtomium*  
rocks in shade
- 46 *Hoya*  
rocks in sun,
- 47 *Alyxia*  
common on rock cliffs  
overhanging sea
- 48 *Davallia solida*  
common on rocks overhanging  
sea
- 49 *Morinda citrifolia* L.  
common generally, this  
from rocks above sea
- 50 *Pongamia pinnata* (L.) Merr.  
rocks above sea

Palau

15-25 m  
↓

large rosette

fleshy

2 m. rhizome short, erect;  
fronds erect.  
blades coriaceous

3-4 m.

↓

vine climbing over rocks  
and bushes, flowers a dull  
yellow very finely and  
closely punctate with maroon.  
semi-scandent shrub;  
flowers dull salmon; ripe  
fruit blue-black.  
rhizome creeping

shrub 2 m. tall; flowers  
white, fruit unusually  
narrow.

shrub ~~2 m~~ 1 m. tall,  
fruit green. racemes appearing  
secund, probably from weight of fruit.

1946

Caroline Is.

- 25851 *Polypodium scolopendrium*  
common generally, this  
one from rocks overhanging sea
- 52 *Gymnosporium*  
~~rare~~ occasionally on  
rocks above sea
- 53 *Randia cochinchinensis*  
rocks above sea
- 54 *Pongamia pinnata*  
rocks above sea
- 55  
rocks cliff <sup>just</sup> above sea
- 56 *Eugenia*  
common on rock cliffs above sea
- 57 *Allophylus*  
common on rock cliffs above sea
- 58 *Allophylus*  
common on rock cliffs above sea
- 59 *Wikstroemia elliptica* Merr.  
occasional on rock cliffs above sea

Palau

rhizome creeping

weak shrub, fruit  
immatureshrub 1 m. long;  
ripe fruit red.

tree projecting over sea

shrub

shrub, mostly sterile

shrub, flowers white

shrub, fruit yellow  
(perhaps not quite mature)shrub, flowers green  
(plant much galled)





1946

Caroline Is.

July 23 - middle of northeast coast of Magaiad (north arm of Urukthapel I.), southwest shore of Malakal Harbor, Palau Is.

E

steep dissected limestone or "makatea", heavily forested.

25860

*Bibbia*

rock cliff just above sea

61

*Psychotria*

top of ridge

62

*Asplenium*

rocky slope, deep shade

63

*Elatostemma*

common on steep rocky slope

64

*Ophioniza*

just above water, steep rocks

65

*Hedyotis albidopunctata*

rock crevices just above sea

66

*Asystasia*

rock ledge just above sea

67

*Callicarpa*

steep rock slope just above sea

68

*Asplenium*

steep rock slope

69

*Peperomia kraemerii* C. DC.

69a

*Peperomia palauensis* C. DC.

rock crevices and ledges just above sea

2 m. shrub, flowers white  
"nur"

20 m. slender tree 4 m. tall,  
flowers white. "stertil"

20 m.

10 m. fleshy, leaves paler beneath.  
"deurs"

1 m.

low shrub

1 m.

prostrate; leave fleshy,  
flowers white.

2 m.

plant prostrate with  
ascending branches,  
flowers white.

1 m.

shrub 2 m. long, hanging  
almost into water;  
flowers white.

5 m.

1 m. fleshy



~~1946~~ 1946 Caroline Is.

- 25870 *Procris pedunculata*  
steep rock slope, shade
- 71 *Allophyllus*  
steep rock slope, just  
above sea

### Palau

On the west side of Babeldaob between Armonogui and Bokungeru Pt. the slopes are steep and rugged. With the exception of a small coconut plantation at Madarabae, there is little evidence of disturbance visible from the sea. The slopes are well wooded with what may well be primary forest. A good patch of this also exists on the north slope of Airakabesan.

The southwest coast of Babeldaob seems to have been largely cleared and burned over, as has the central area about Garumiscan Colony. There were, at the latter place, small patches of

### Palau

- 2 m. fleshy; fruiting heads  
white.
- 1 m. shrub; flowers white;  
fruit red when ripe.  
"ebeludes" used medicinally  
for eyes.

pineapples which, together, must have aggregated a good many acres, as the remains of a fair sized cannery are at the head of navigation on the river. Both Smooth Cayenne and Fiji (Wild Kailua) type pineapples are present, the former more abundant. The patches have been somewhat neglected and, though the fruit is still harvested, and the patches are not too weedy, the fruit now averages very small, perhaps 4-6 inches long. The Fiji type has stood up better, averaging perhaps 2 inches longer, and is here more juicy



1946

Caroline Is.

and better flavoured than I have ever seen it.

Much *Manihot* also still persists here. It was evidently one of the principal crops planted by the Japanese. Sweet potatoes, <sup>headfruit,</sup> *Cassipoua quadrangularis*, papayas, a few avocados, <sup>bananas,</sup> and a few other food plants still persist, as well as such ornamentals as a hybrid *Hibiscus*, an *Antirrhinum*, and *Allamanda cathartica* var. *hendersonii*.

The low flat portion of the valley, where it is not wooded, is densely covered by a mat up to 1 m. deep of *Paspalum conjugatum* and 2 sp. of *Ischaemum*, with a little *Paspalum orbiculare* (?). This conceals various holes, wells, etc. and is marked by large bomb craters.

A few people live here in old Japanese houses. Their food consists of the plants mentioned above.

Palau.

They have no livestock of any kind, not even dogs and chickens. It is said that the Japanese even ate the wild monkeys that were found on Babeldaob. I saw none.

Koror has been thoroughly altered. The flora there now is almost entirely introduced. In fact, the island is more or less of a botanical garden. Nothing is apparently left of the Palau Tropical ~~Bot~~ Biological Station. Koror would be worth a good exploration as a source of tropical fruit and ornamental trees. There was no chance to get even a slight idea of what was there.

Urakabesan is similarly disturbed on the side toward Koror, though on the higher slopes are secondary thickets of native vegetation. On the west side is the old seaplane base, very weedy, and above it on the slopes is broken secondary vegetation and evidences of former cultivation.



The raised coral islands to the south remain virtually unexplored. The steep slopes are covered by a dense forest in which can be discerned *Dracaena*, one or more species of *Pandanus* (the natives are said to use the *pandanus* leaves from these islands for weaving), *Psychotria*, and many trees that were not identifiable from a distance. *Ipomoea alba* (?) is festooned over the forest in many places. This forest, in the one place it was penetrated, is fairly free of undergrowth, except for a few ferns, but where disturbed, as on ~~the~~ Ngeanger where it has been bombed, it is almost impenetrable. The lower edges just above the water have many species of shrubs (see colls. from Unkithapel and ~~the~~ Ngeanger) hanging over the cliffs. Here <sup>on the cliffs</sup> the sunlight is more abundant. In the forest on the slopes these shrubs are

shaded out.

On the ~~south~~ shore of Malekal Harbor where I landed is a curious phenomenon. I climbed over a ridge and in what looks like a sink hole, with no apparent connection with the sea is a tiny mangrove swamp. The trees appeared to be a sterile *Bruguiera*, but I had no time to investigate. It should be looked into again.

On the higher ridges a *Ptychosperma* or similar palm is abundant. It may be seen outlined against the sky.

July 25 - west side of Pelelin I.  
weedy lowlands with  
marshy places and  
cultivated patches

25872 *Ipomoea reptans*  
common in cultivated  
low place

73 *Colocasia esculenta*  
cultivated or persisting  
from cultivation in  
desiccating marsh

74 *Cyrtosperma*  
abundant, cultivated  
or persisting from cultivation  
in desiccating marsh

75 *Pipturus argenteus*  
very abundant, weedy

76 *Zypharium xanthosoma*  
cultivated in friable  
sandy coral soil

77 *Alocasia macrorhiza*  
roadside, occasional

sterile

sterile; petioles erect,  
blades pendent, surface  
dull. ~~setts~~

~~leaf~~ sterile, leaves  
erect, shiny.

shrub 1 - 2 m. tall  
said to be good pig feed.  
sterile; leaves glaucous  
green, distinct angle  
between petiole and  
blade.

leaves erect, glossy, green;  
flowering spadices from  
between 2 basal bracts,  
spadix with appendage  
orange, staminate flowers  
white; spathe with  
base green, free part  
erect, bronze-purple.



July 26 - central part of  
Angaur I.

sterile coral, surface <sup>mostly</sup>  
removed by bulldozers,  
scattered trees remaining

25377

*Ipomoea*  
everywhere

79

*Eugenia*

common in woods  
and around houses

80

*Planchonella*

common in woods,  
one of characteristic trees

81

*Euphorbia heterophylla*

common along roadsides

82

*Canna edulis*

patches along roadsides

83

in phosphate area

*Stachytarpheta*

abundant locally

84

*Amaranthus spinosus*

occasional

85

*Terminalia catappa*

occasional

86

*Acrostichum aureum*

abundant in marsh

(probably an old phosphate  
excavation)

great vine climbing  
over trees, no flowers  
or fruit this season.

tree 7 m. tall, trunk  
smooth, bronze green,  
flowers whitish, rare.

tree 7 m. tall, sterile.

bracts red ~~at~~ <sup>in</sup> basal  
portion.

erect herb 1 m. tall,  
flowers scarlet.

herb 1.5 m. tall, leaves  
bullate, rugose, flowers  
deep blue-purple.  
stems red.

small tree 3 m. tall (other  
much larger), sterile  
(all seen sterile).

clumps 1 m. tall.

- 25337 *Polygonum*  
abundant weed in  
*Cyrtosperma* patch
- 88 *Dryopteris gongilodus*  
weed in *Cyrtosperma*  
patch, very abundant
- 89 *Columella trifolia*  
edge of *Cyrtosperma*  
patch
- 90  
drying mud puddle
- 91 *Ipomoea reptans* ~~*aquatica*~~  
weed in *Cyrtosperma*  
patch, common
- 92 *Cyperus striatus* ~~*javanicus*~~ Hort.  
common generally. This  
at edge of *Cyrtosperma* patch
- 93 *Premna obtusifolia* L.f. (C. L. H. S.)  
occasional along roadside  
in low bush
- 94 *Thuarea involuta*  
common on flat sandy places

same - inside of  
depression in hill on  
northwest corner of -

prostrate, forming a  
dense tangled mat; flowers  
white.  
rhizome prostrate,  
buried.

vine, climbing on  
bushes; flowers green;  
fruit immature  
flowers bright lavender  
with yellowish-white  
tube and 2 bright  
yellow ridges on palate.  
stems prostrate  
with ascending tips,  
fistulose; sterile.  
caespitose

shrub 1 m. tall; flowers  
green, aromatic; fruit  
black when ripe, ripening  
unevenly.

prostrate, forming  
a thin mat.

island.

bushy secondary vegetation  
with ledges and occasional  
steep ravine sides.



25895

*Ficus*

occasional

96

*Morinda citrifolia* L.

common, edge of ravine

97

*Mussaenda frondosa*

occasional

98

occasional in ravine

99

*Polyscias*

common locally

25900

*Dryopteris*

common on steep ravine side

01

*Lygodium acuminatum*

occasional.

02

*Mussaenda frondosa*

occasional

03

*Dryopteris*~~on vertical~~ at base of  
vertical bank on coral

04

*Passiflora foetida* L.

common everywhere

broken tree (some seen  
quite large); ripe fruit  
reddish yellow, rare.shrub 2.5 m. tall;  
flowers whiteshrub 2 m. tall;  
~~the~~ enlarged calyx lobe  
white; flowers bright  
deep yellow.shrub 3 m. tall,  
fruit immature.shrub 3 m. tall; flowers  
and panicle red; fruit  
immature.fronds vine-like, climbing  
on ~~the~~ bushes, distal  
pinnae fertile.shrub 2 m. tall,  
enlarged calyx lobe  
white; fruit immature,  
slightly obovoid.

under side of frond green.

vine climbing over  
shrubs.

1946 Caroline Is.

mucronata Desv.

25905

*Crotalaria saltiana*

occasional along road

06

*Plechum pyramidatum*

occasional

07

*Ipomoea batatas*

rare along roadside

persisting from cultivation

08

*Erigeron*

rare along roadside

09

*Carica papaya*

common weed everywhere

10

*Peperomia*

open place where

coral gravel has been dug away

11

*Synedrella nodiflora*

roadside

12

*Centella asiatica*

open place where

coral gravel has been

excavated; common

13

*Urena lobata*

occasional along roadside

14

*Sida acuta*

common locally along roadside

herb 1.5 m. tall; flowers  
yellow, banner striate  
with maroon.— prostrate with  
ascending branches.— prostrate, sterile;  
leaves veined with  
purple.

— aromatic

erect stem with  
rosette of leaves  
(mostly much larger  
than this specimen;  
flowers cream white.— fleshy, pale green,  
translucent, leaves  
rather thin.

— flowers yellow

— ~~can~~ prostrateherb 1 m. tall; leaves  
gray beneath; flowers  
purplish pink.— herb 1 m. tall, flowers  
yellow



same - northwest coast  
of island. raised, very  
rough dissected coral,  
forest above strand has  
been almost completely

25915

*Fimbristylis*

open roadside above sea

16

*Fleurya ruderalis* (Forsk.) Gand. ex Wedd.

open coral above sea

17

*Wedelia biflora* var. *canescens*

common on coral bluffs

above sea

18

*Callicarpa*

common on coral bluffs

19

*Pemphis acidula* Forsk.

common on coral bluffs

20

*Capparis*

common on coral bluffs

21

*Hedyotis albido-punctata*

common on coral bluffs

22

*Lepturus repens*

common on open coral bluffs

destroyed by bombing  
and shelling during war,  
skeletons of trees standing,  
some partially alive.

tufts

stems fleshy, red.

prostrate, gray-green,  
flowers yellow.

dense bush 1 m. tall;

flowers bright purple;

fruit deep purple-black.

semi-prostrate shrub,

leaves fleshy, rather

astringent to taste.

semi-prostrate shrub,

~~fl~~ leaves sub-fleshy,

blue-green; flowers

white, starting to

collapse just before

noon on a cloudy day.

prostrate, fleshy,

forming mats; flowers

white, lobes elliptic,

spreading, tube swollen.

prostrate, forming

loose mats.

- 25923 *Asplenium*  
semi-shaded rocks
- 24 *Cyperus*  
wet place beside road
- 25 *Barringtonia asiatica*  
common tree in forest
- 26 *Asystasia*  
edge of secondary  
woods on ridge top
- 27 *Pipturus argenteus*  
dominant shrub in  
secondary forest over  
whole island, this  
on top of highest ridge
- 28 *Triumfetta procumbens*  
common on coral bluffs  
above sea
- 29 *Casuarina equisetifolia*  
common tree on bluffs  
above sea.
- 30 *Fimbristylis*  
common on coral bluffs  
above sea
- 31 *Portulaca oleracea*  
roadside
- 32 *Messerschmidia argentea*  
common along coral bluffs

tufts

tree 10 m. tall, very  
sparsely leafy, fruits  
on ground beneath tree.  
erect herb 1 m. tall,  
flowers lavender.

shrub 2 m. tall  
fruit white, fleshy.

prostrate, ~~fls~~ extensive;  
flowers yellow.

large tree 12 m. tall,  
badly damaged; all  
seen sterile.

tufts

plant prostrate,  
fleshy, purplish green.  
shrub 1.5 m. tall,  
leaves fleshy, silvery green,  
the flowers white.



- 25933 *Achyranthes aspera*  
roadside
- 34 *Clerodendron*  
bluffs above sea
- 35 *Guettarda speciosa*  
common on makatea  
above sea.
- 36 *Pisonia grandis*  
common on bluffs  
above sea
- 37 *Macaranga*  
one of dominant small  
trees or shrubs in secondary  
forest.
- 38 *Colubrina asiatica*  
common in secondary forest
- ~~39~~  
same - dense wet forest  
on ridge of rough dissected  
coral, n. w. corner of island
- 39 climbing tree
- 40 *Elatostemma*  
common under trees
- 41 *Asplenium nidus*  
common on rocks under trees

- leaves somewhat fleshy  
stamens purple.
- semi-prostrate shrub,  
extensive; flowers  
white, stamens deep  
purple.
- badly shattered tree,  
flowers white.
- large more or less  
shattered tree;  
flowers  
shrub 2 m. tall.
- semi-scandent shrub,  
flowers yellow.
- vine, clinging <sup>loosely</sup> to tree  
trunks. spathe yellow  
ochre color.
- herb with fleshy  
stem up to 1 m. high.  
rosette of ascending  
fronds.

- 25942 *Clerodendron*  
common in forest
- 43 *Polypodium*  
epiphytic on tree trunks
- 44 *Procris pedunculata*  
common in shade on rocks
- 45 *Ficus prolixa*  
common in forest
- 46 *Randia cochinchinensis*  
common in forest
- 47 *Asplenium*  
common on rocks
- 48 *Piper*  
common in forest
- 49 *Schefflera oboata* (Blanco) Merr. & Rolfe  
common in forest

same - e. side of island  
in rather shot-to-pieces  
strip of woods on  
bare rather rough coral

- shrub 1-2 m. tall;  
flowers scarlet; fruiting  
calyx red.  
flattened rosette
- ascending shrub,  
m. tall, heads  
white, fleshy.
- large banyan-type  
tree: figs green, only one seen.  
tree 3 m. tall, flower  
buds white; fruits  
turning red at maturity.
- vine, climbing on  
trees, leaves on sterile  
parts peltate, on  
flowering branches not  
peltate.
- vine, strong oily odor  
when broken; flowers  
white; ripe fruit  
orange.

*Eugenia* sp. is the  
most prominent tree.  
*Cyrtosperma* in low  
spots.



- 25950 *Phrysalis*  
roadside
- 51 *Pteris*  
roadside, common
- 52 *Cyrtosperma* <sup>merkusii (Hassk.) Schott</sup>  
<sup>det. D.H. Nielsen 6/1998</sup>  
low place in woods  
common.
- 53 *Nephrolepis*  
common in woods  
on rock and logs
- 54 *Tectaria*  
common in woods
- 55 *Portulaca quadrifida*  
common locally along  
roadside in sand
- 56 *Amaranthus spinosus*  
occasional along roadside
- 57 *Digitaria timorensis*  
rare in trail in woods
- 58 *Pteris*  
common generally, mostly  
in woods.
- 59 *Paspalum conjugatum*  
common everywhere,  
this from trail in woods
- 60 *Eugenia*  
dominant tree in woods
- 61 *Barringtonia racemosa*  
common in low <sup>wet</sup> woods

- flowers pale yellow
- rhizome and fronds erect.
- sterile, some leaves  
up to 1 m. tall, petioles  
scarcely prickly.  
erect
- rhizome short, erect
- prostrate, fleshy;  
leaves somewhat compressed,  
flowers yellow.
- forming loose mat.
- rhizome erect, (other  
plants up to 1 m. tall)
- rooting at nodes.
- large tree, all seen  
sterile
- small tree 4 m. tall,  
racemes pendent, immature  
fruit distinctly 4-sided.

25962 *Antrophyum*

rare on tree trunks

63 *Ophioglossum pendulum*

rare on tree trunks

64 *Derris* ~~alt~~ *trifoliata*

common in forest

~~65 *Abutilon*~~~~one of~~

same - north end  
of island - low weedy  
coral that has  
had top-soil removed

~~65 *Abutilon*~~~~are of dominant shrubs in brush~~65 *Hibiscus*

occasional in weedy place

66 *Emilia sonchifolia*

common along road

67 *Hedyotis corymbosa*

common along road

68 *Chloris inflata*

common along road

69 *Euphorbia*

common in open ground

70 *Eragrostis*

rare, one tuft seen along roadside

fronds arching, then pendent

sterile vine.

open patches and  
patches of second-growth  
brush.

shrubby or tree tall,  
stems bipinnate, flowers  
yellow with maroon  
base.

herb or suffrutescent  
herb 1 m. tall, flowers  
bright yellow.

flowers purple.

flowers pale lavender

tufts, decumbent at base,  
then erect.

prostrate



- 25971 *Borreria*  
rare here in weeds
- 72 *Canavallia*  
common in brush
- 73 *Euphorbia hirta* L.  
common along road
- 74 *Abutilon* ~~abundant~~  
one of dominant shrubs
- 75 *Jussiaea*  
abundant locally around pools.
- 76 *Phyllanthus* <sup>*amarus Schum. & Th.*</sup> ~~*sericeus*~~ det. G. L. Webster, 1955  
common in open places
- 77 *Echinochloa coluum*  
local in dessicating pools along road.
- 78 *Cyperus*  
local in pool along road
- same - east side of island, roadside
- 79 *Borreria*  
large patch along road
- 80 *Cenchrus echinatus*  
common along road
- 81 *Sesuvium cinereum*  
occasional generally in open

- flowers white
- extensive vine; flowers bright magenta.  
stems arching
- shrub 2 m. tall, stems hispid, flowers greenish yellow, maroon at base.  
stem leaves lobed, branch leaves ovate.
- suffrutescent herb  
1-1.5 m. tall, flowers yellow, petals about 1 cm. long.
- small spreading tufts.
- Tufts
- cact., flowers white.
- large masses
- flowers purple

Angaur Island is a rather small platform of raised coral with a low hill occupying the north west corner.

There is a shallow depression in the top of this hill with a pond in it, which is apparently an old phosphate mine. It is not certain whether the entire depression is the result of phosphate mining but it may well be.

Phosphate rock is irregularly distributed over the island in large or small pockets.

I see no significant effect of the phosphate on the vegetation.

A large part of the island has been so scraped over by bulldozers that it is scarcely possible to discern what the original vegetation may have

been, but likely it was largely forest. Remnants of this still exist along the east, southeast and north-west coasts. Scattered trees remain inland where the bulldozers missed them, or where they were spared as camp ornaments.

A considerable area of low ground forms a large *Cyrtosperma* swamp, just in from the east coast. It was doubtless cultivated before the war, but is very weedy now.

Around the village are patches of sweet potatoes and tapioca. Breadfruit trees are relatively rare, ~~but~~ ~~quite~~ and there are not many coconuts.

The forest in most places is tattered and torn by shell fire



and bombing during the war. Many trees are just skeletons or half dead.

The composition varies along the east coast it is mixed but with *Eugenia* sp.

25940 predominant, and some *Ficus*. The *Eugenia* is also prominent elsewhere, but with another *Eugenia* 25879 and what appears to be *Blanchardella* 25880. On the northwest coast *Pandanus* 2 sp. (*tectorius* & *fragrans*?) <sup>*inensis* *schmidii* *Pisonia* *Bahringensis*</sup>, *Casuarina*, and *Guettarda* become important. In

the thicker part of this, on rough coral, *Piper* is common, climbing over everything. *Randia cochinchinensis* is common here.

Just inside of the hill are various small ponds which may well be the result of phosphate

mining. They support a good stand of clumps of *Acrostichum aureum* and little else.

The outstanding thing about the vegetation at present is the rank growth of a bush of *Pipturus argenteus*, <sup>some</sup> *Macaranga*, <sup>with some *Morinda*</sup>, *Abutilon* (25974), and the great areas covered by *Ipomoea* sp. (25878) with some *Canavalia*, and in places near the coast, *Wedelia*. This is an incanous form. These plants thrive even on what appears to be coral scraped entirely bare.

(Weeds are abundant along the roadside, and in openings.)

This stand has evidently come in since the war and completely dominates the island now.

1946 - Caroline Is.

July 27 - Peleliu Island,  
S.W. coast  
secondary vegetation of  
Pipturus, Ipomoea, etc. a  
bush 2-3 m. tall, very  
dense.

- 259 82 ~~Ipomoea~~ Opuntia Eupelliana (L.) Maus  
very abundant, covering  
large areas of secondary  
vegetation
- 83 Melochia  
rare in brush

July 27 - rough coral  
back of north end of  
beach on east side of  
island, "Purple Beach", Peleliu.  
dense mixed forest

- 84 Premna  
edge of forest
- 85 Fleurya ruderalis  
roadside
- 86 Psychotria  
sparse undergrowth in  
dense forest
- 87  
rare in dense forest

~~Palau~~ Palau

extensive vine, sterile at  
this season.

bush 1.5 m. tall;  
flowers pink.

shrub 2 m. tall,  
flowers green,  
stems reddish, fleshy.

shrub 1 m. tall; fruit  
immature.

tree 15 m. tall with a  
straight trunk 7 m. to  
lowest branch, branching  
aerial root at 3 m. height,  
scars of others on trunk; sterile.



- 25933 *Randia cochinchinensis* Lour.  
occasional in forest
- 89 *Leea*  
common around edges  
of forest
- 90  
occasional in forest
- 91 *Diospyros ferrea*  
rare in forest
- 92 *Eugenia*  
one of commonest trees in  
forest.
- 93  
one of common trees in forest
- 94 *Canavalia* <sup>*cathartica* Thunberg</sup> *microcarpa*  
~~vine climbing over~~  
common around edges  
of forest
- 95 *Thuarea involuta*  
common in openings  
and along roadsides
- 96 ~~*Bougainvillea*~~ *Ceriops tagal* (Pers.) C.B. Rob.  
common in mangrove swamp
- 97 *Davallia solida*  
common epiphyte  
on tree trunks

- tree 5 m. tall, buds  
white, ripe fruit red.
- vine climbing in trees,  
flowers green; ripe fruit  
black, subglobose.
- tree 5 m. tall, (others  
larger), fruit green.
- small tree 4 m. tall,  
fruit bright orange,  
flesh very firm.
- small tree, fruit green.
- small tree 5 m. tall,  
(others much larger)
- flowers white.
- vine climbing over  
trees, flowers magenta.
- forming thick mat.
- tree 4 m. tall, with  
white flowers, knee-like  
pneumatophores.

25993

*Colubuna asiatica*  
common in thickets at  
edge of ~~swamp~~ mangrove  
swamp

99

*Clerodendron*  
common in thickets at  
edge of mangrove swamp

26000

*Elatostemma*  
common on rough coral  
in shade

01

*Polyscias grandifolia* Vahl.  
one plant seen, in forest  
on rough coral

02

*Fimbristylis*  
common on rough coral  
just seaward of forest

03

*Hedyotis albido-punctata*  
common on rough coral  
just seaward of forest

04

*Capparis cordifolia* Lam.  
rough coral just seaward  
of forest

05

*Meryta seufftiana* Vahl.

small shrub,  
flowers yellow,  
fruit immature.

scandent shrub,  
flowers white,  
pinkish without,  
stamens <sup>deep</sup> crimson.  
stem fleshy

erect, unbranched,  
1.5 m. tall, panicles  
in 3 terminal pseudo-  
whorls; calyx and  
ovary purple-green, corolla  
light green. odor like  
celery  
tufts

prostrate, forming mats;  
leaves fleshy; flowers  
white, corolla lobes  
elliptic-ovate.

upright ~~herb~~ suffrutescent  
herbs; leaves glaucous;  
flowers faded at 3 p.m.  
tree



- 26006 *Callicarpa*  
common just seaward  
of forest
- 87 *Acalypha*  
common on seaward  
edge of forest and along  
road in forest
- 08 *Iporroea alba* L.  
common at seaward  
edge of forest
- 09 *Tacca leontopodioides*  
common in seaward  
edge of forest, spontaneous
- 10 *Pemphis acidula*  
common just seaward  
of forest
- 11 *Iporroea per-caprae* (L.)  
common on beach

Peleliu is a somewhat  
raised atoll with an  
abrupt ridge of coral  
limestone domes along  
the west side. (Bloody Nose  
Ridge). The central

- shrub 1 m. tall;  
flowers bright purple, ripe  
fruit purple-black.
- shrub 2 m. tall,  
stigmas greenish,  
~~the~~ pistillate spikes  
erect, staminate drooping.  
— vine climbing  
extensively; flowers  
white, fruiting calyx  
fleshy until it dries  
and opens.
- herb 1-1.5 m. tall,
- shrubs and trees  
up to 5 m. tall; leaves  
sub-fleshy, saline-astringent  
when chewed; flowers white.
- prostrate, extensive;  
flowers purple with  
red center.

portion is low and  
occupied by mangrove  
swamps, with an  
entrance at the northeast  
corner. To the north,  
connected by sand

flats of considerable extent, awash at high tide, lies

At the south end are flats of considerable extent several meters above the sea. These are occupied by air strips and military establishments. Here the dominant plant everywhere among the buildings is *Eleusine indica*.

To the west of Bloody Nose Ridge lie the native villages and ~~the~~ marshes where they raise *Cyrtosperma* and *Colocasia*. The patches are quite weedy. On the slightly higher ground *Alocasia* and *Typhonium* are cultivated. Also there is some *Mimibot*. Coconuts are very few excepting on the east side of the island. The waste spaces on the west side and general vicinity of Bloody Nose

Ridge, as well as most of the ridge itself are a dense growth of *Pipturus argenteus* with some *Macaranga glauca* tangled with *Ipomoea* (25982). What forest was on the ridge was totally destroyed in the war, when enormous quantities of jellied gasoline were dropped on the ridge. <sup>the steep slopes are tree trunks</sup> ~~completely~~ drafted with *Ipomoea*.

The mangrove swamps are in rather decadent condition except on the east side, because of fires and war damage. It is said that there has been considerable phosphate mining on the island in former times.

and *Hibiscus*  
*tiliaceus*  
locally



Along the east coast, on a strip of rough coral and sand, raised several m. is a stand of mixed forest, interrupted by coconut plantings and in places rather poor because of the war, ~~bordering~~ <sup>bordering</sup> inward on the mangrove swamps but separated in most places by a road. This forest is so mixed that there are no dominant species. *Eugenia* (25992) is very common. Another *Eugenia* and one or two species of *Ficus*, *Blanchonella* (?), *Randia cochinchinensis*, are also common occasional. Along the coast are enormous *Casuarina* trees with great buttresses at the base. Breadfruit is common.

The outer edge, at the north end, at least, is fringed by *Pemphis acidula*. *Ipomoea alba*, *Pilea* (?), and *Canavallia* are ~~also~~ very

conspicuous around the edges. Along the road in disturbed ground are tangles of *Pipturus*, *Macaranga*, *Premna*, and the above mentioned vines. Ferns are common but not conspicuous. The northern end, only, of this strip was studied briefly. The whole area would well repay an extended visit.

On the rough coral outside the forest *Capparis*, *Trimeristylis* and *Hedyotis albidopunctata* and *Callicarpa* sp. are found.

On the ~~sea~~ edge of the mangrove swamp are *Allophryllus*, *Clerodendron* and *Colubrina*.

1946 Marianas Is.

July 28 - <sup>low fore hills</sup> ~~hills~~ above Piti,  
west coast of Guam  
open grassy slopes  
with scattered shrubs,  
volcanic soil. 60 m.

26012 *Dodonaea viscosa*  
rare

13 *Wikstroemia elliptica*  
occasional

14 *Myrtella benignianiana* (Vahl.) Diels  
common

15 *Rynchospora*  
common locally

July 28 Piti, Guam  
grounds of former experiment  
station 3 m.

16 *Pterocarpus echinatus*  
several planted trees

July 28 - Cornianan Hill,  
Guam

17 *Cestrum diurnum*  
common in bushy weed  
patches

Guam

shrubs 1 m. tall (2 plants  
represented in specimens)  
fruits 2, rarely 3-merous,  
pale green drying straw color,  
not at all reddish or purplish.

shrub 1 m. tall; flowers  
green.

dense shrub 0.8 m. tall,  
flowers white.  
tufts.

spreading tree 6 m. tall  
with drooping branches  
with distichously  
arranged branchlets.

shrub 1 m. tall,  
flowers white.



1946 - Caroline Is.

July 31 - Muan Village,  
Moen I.old mango grove on  
slope at foot of  
mountain, said to be  
oldest mango trees in  
Truk, planted by early  
American missionary named  
Logan.

26013

*Mangifera indica*~~large tree 20 m. tall~~

19

*Piper*

climbing on tree trunk

20

*Sorghum*small patch, said to  
have been planted by  
Japanese.

21

*Canna*probably persisting from  
cultivation *Saccharum sp.*

22

~~*Miscanthus japonicus*~~large brake-like patches  
and clumps on open  
slopes.

Truk Is.

an enormous tree  
of ~~Samanes~~ *Saman*  
and one of *Peltophorum*  
*inermis* also here.

10 m.

large tree 20 m. tall,  
flowers greenish bronze  
vine, with very  
marked pleasant odor,  
even when unbroken.  
herbs 1-1.5 m. tall,  
seed used as food by  
Japanese.herb 1.5 m. tall,  
flowers yellow with  
red spots.grass 3 m. tall, only one  
flower cluster seen

July 31 - Lapuk Peninsula  
eastern point of Moen I.,  
broken secondary growth  
on lower slopes.

26023 *Derris elliptica*  
common along road

24 *Hedychium coronarium*  
in low grassy place, local  
"tulul en won" "ginger"

25 *Tacca leontopodioides*  
grassy slope with  
thickets, common

26 *Cassia occidentalis*  
common in open place

27 *Rynchospora*  
in low place, marshy

28 *Derris elliptica trifoliata*  
edge of mangrove swamp

29 *Tenia* Village.  
July 31 south shore of  
Nomenuk Bay, east coast  
of Moen I.

marshy low coastal  
terrace bordered by mangrove

29 *Ficus*  
shrub on base of *Terminalia*

vine; leaves glaucous  
beneath. "up" used  
for poisoning fish.  
herb 1 m. tall; flowers  
white, upper segment  
with a yellow patch  
in center of base,  
deliciously fragrant.  
erect, acanulescent,  
scape taller than  
leaves, "mohumole"  
erect herb, 1 m. tall;  
flowers yellow. "afanapan"  
caespitose, stems  
almost erect. "moirer"  
vine, extensively creeping,  
sterile "unenipot".

swampy sterile. "au".





1946 Caroline Is.

26030 Macaranga

common on slopes

31 Terminalia catappa

common on edge of  
marsh

32 Zingiber

local near houses

33 Flagellaria indica

in thicket

34 Hibiscus tiliaceus

common in thickets

July 31 Head of Nomenul

Bay, e. coast Moen I.

near house at base of cliffs

35 Ficus ~~lucida~~ ~~Kanthonia~~  
cultivated

Truk Is

shrub. "tup"

large spreading  
tree 15 m. tall, fruit  
fleshy, yellow, flesh  
astringent, seed edible  
"As".clumps from closely  
branched rhizomes,  
strongly aromatic  
when broken, flowering  
spikes ellipsoid-ovoid,  
filled with an aromatic  
clear mucilage which  
is said to be used to  
cure headaches and  
to relieve extreme  
heat. ~~"Tutul Tukul"~~

"Tutul Truk".

vine, sterile.

"nikosuk"

shrub, flowers  
yellow. "sinifu"leaves at angle with  
petiole, blue green above, glaucous  
beneath. sterile. "Oten Japan" <sup>dorm eaten</sup> said to be int. by ~~people~~



1946 Caroline Is

20036. *Crataeva speciosa*  
planted near house

37 Citrus  
planted near houses

38 *Ageratum conyzoides* L.  
weed near house

39 *Dioscorea alata*  
cultivated near house

40 *Abrus precatorius*  
weed in thicket

(41) *Ipomoea gracilis*?  
weed in open

42 ~~Ficus~~  
tree

July 31 - north of <sup>side</sup> Nomenuk  
Bay, East coast of Moen?  
Talus at base of columnar  
basalt cliffs

42 Ficus

7 miles Is.

small tree 4 m. tall,  
petals white, turning  
yellow, stamens deep  
purple; fruit pendent,  
eaten uncooked when ripe  
~~"afutis" or "afutis"~~ "afutis" or "afutis"  
tree 5 m. tall; fruit  
round, green, pulp bitter  
but juice used in drinks

aromatic herb, flowers  
white. "opolopon"

sterile vine, extensive,  
petioles red at base  
and top. "ampul" or "ep"  
tuber eaten.

climbing in trees  
"totus".

sterile vine "rukamuk"  
or "ruk"

large spreading tree,  
figs green. "au" bark  
used medicinally to prevent  
"sawz" in children.

1946 Caroline Is.

26043

*Dioscorea bulbifera*

common in thickets

49

July 31 - Tunnuk village,  
south shore of Bon Bay,  
east coast of Moen I.  
edge of mangrove swamp

44

*Thespesia populnea*

Aug. 1 slope of Mt.

Tonaachan, Moen I.

cleared ridge, mainly  
vegetated with *Paspalum*  
*conjugatum*, *Miscanthus*  
*japonicus*, etc. *Indigofera*  
*villosa* common; also

45

*Scleria polycarpa* Boeckl.~~to~~ open slope

46

*Dioscorea bulbifera*open slope, in clump  
of *Scleria*

47

*Scleria*

open slope

48

*Fimbristylis*in open ~~at~~ deep grass

49

*Curatella*

open eroded soil, otherwise bare

Truk Is.

sterile vine climbing over  
bushes, bearing aerial tubers.  
"apueraka"

small tree 5 m. tall,  
flowers yellow, turning  
red. "pöni"

*Sida acuta*, *Paspalum*  
*orbiculare*

This ridge shows traces of the  
burned, eroded land flora of  
the islands to the west, but very few  
species.

100 m.

large clump.

vine, aerial tubers  
purplish, warty.

dense clumps.

~~the~~ roots fleshy; leaves  
plicate; flowers yellow.



1946 Caroline Is.

- 26050 *Fimbristylis*  
open grassy slope.
- 51 *Urena lobata*
- Saccharum spontaneum* L.
- 52 ~~*Micranthus japonicus*~~  
dominant in places,  
forming brake-like patches
- 53 *Piper*  
climbing on trunk of  
large *Artocarpus*
- Aug. 1 Top of Mt.  
rocky knob with  
ledges and a flat top
- 54 *Ipomoea digitata* L.  
common generally in  
thickets
- 55 *Cyperus*  
common in crevices  
and grassy places
- 56 *Procris pedunculatus*  
in shaded places on rocks
- 57 *Cyperus*  
in grassy places on top
- 58 *Phyllanthus urinaria* L. det. G. L.  
grassy ledges
- 59 *Fimbristylis*  
grassy ledges + rock crevices, rare

Truk Is.

ascending culms.  
~~erect~~  
erect herb; leaves  
glaucous beneath, flowers  
purplish pink.  
dense clumps, canes  
up to 3 m. tall, midribs  
of leaves white.  
vine, leaves with  
acid taste.

extensive vine; flowers  
pink-purple, red  
within throat.  
tufts; spikelets green.

stems fleshy; leaves  
distichous; flowers  
in fleshy heads, scarce.  
spikelets brownish

Walter, 1955

1946 ~~Kapingamarangi~~ Caroline Is.

Aug. 3 - Hare Islet

rather open Coconut-Breadfruit forest with relatively little undergrowth in most places, flat sandy soil with considerable humus.

26060. *Asplenium nidus* L.  
common generally,  
mostly terrestrial, in shade.61. *Achyranthes aspera*  
common generally in  
shade62. *Stenotaphrum <sup>micranthum</sup> subulatum*  
abundant generally  
under trees63. *Scaevola frutescens* (Mill.) Kr.  
fringing forest on outer beach~~64~~64. *Pipturus argenteus*  
occasional65. *Guettarda speciosa*  
very common along <sup>outer</sup> beach,  
~~less~~ common in forest.

Kapingamarangi Is. 159

[small plant coll. by Aug 7-4.  
Turner on Machiro Is. in  
depression, fls. lavender]rosette of ascending  
fronds. "tirokohe"

herb 1 m. tall.

"tikengtutui"

prostrate.

forming a thick  
mat (so like *Thunbergia*  
in appearance as to  
be deceptive when sterile)

"tikengasoi"

shrub up to 4 m. tall,  
flowers white, ripe  
fruit a white drupe.

"ti nau"

shrub 1 m. tall, ripe  
fruiting heads white

"warengaw"

tree 5 m. tall (others up  
to 15 m. or more); flowers  
white. "ti pua"  
leaves "tirapua"



26066 *Messerschmidia argentea*  
common along outer beaches

67. *Allophyllus thorensis*?  
very rare

68. *Alocasia macrorhiza*  
occasional, planted

69. *Cyrtosperma chamissonis* (Schott) Merr.  
extensively planted  
in deep excavations  
full of muck.

70. *Artocarpus altilis*  
common in forest

"tikun" = tree

"tuakun" = fruit

71. *Musa nana*  
in muck at edge of Cyrtosperma patch in excavation

72. ~~72.~~ *Colocasia esculenta*  
scattered in *Cyrtosperma*  
bed in muck-filled excavations

shrub 4 m. tall (others  
larger); leaves fleshy,  
silvery green, flowers  
white "sokotokong" "kotohong"  
~~sterile~~ sterile shrub 1 m.  
tall "sakahai".

sterile, stem 4 dm. tall,  
petioles bronze-mottled.

"tingangai".  
subcaulescent, leaves  
erect, up to 1.5 m. tall,  
"tipurau" corn cooked  
in pieces with coconut  
milk (squeezed from grated nut)  
in coconut shells, or  
pounded and cooked with  
coconut milk to make a  
pudding.

large tree, as much  
as 20 m. tall, fruit  
eaten cooked in a co-  
conut shell with grated  
coconut. "tiokui" or "rakui".  
plant 1 m. tall.  
"tihuch"

acaulescent, leaves  
dull, "tisai"  
corn eaten



- 26073 *Pteris tripartita*  
occasional, this from  
embankment above  
*Cyrtosperma* patch
74. *Pandanus*  
very common in woods  
mats made from leaves  
called "tikahara" and  
woven rectangular pillows  
called "tirung".
75. *Pisonia grandis*  
occasional in forest.
76. *Terminalia* <sup>*samoensis* Rech.</sup> ~~*litoralis* Lam.~~  
rare (one plant seen)
77. *Hibiscus tiliaceus* L.  
common, often at edges  
of *Cyrtosperma* patches,  
in shade.
78. *Clerodendron inerme* (L.) Gaertn.  
common, especially in  
open places.
79. *Ipomoea* <sup>*tuba*</sup> ~~*alba*~~ L.  
occasional toward outer  
beach.

- rhizome short, erect.  
"tengasoromangama"
- tree 6 m. tall (fruit), leaves  
from seedling beneath  
it. "tipin" is <sup>large</sup> tree or  
trunk. "timangapinu"  
is branch "tirahara" is  
small tree. "timalarauhara"  
is leaves, green or dry.  
Fruit eaten. <sup>rectangular pillow</sup> ~~called~~
- tree 8 m. tall, sterile.  
"tipuka"
- shrub 1.5 m. tall, pubescent  
not brown, sterile. "tikaniu".  
sterile tree 5 m. tall, leaves  
rather green beneath.  
"tihan". fiber of inner  
bark used to weave lava-lavas  
called "sema". fiber from  
bark called "marohan"
- sprawling shrub, extensive;  
flowers white, purplish  
outside, stamens + pistil  
purple. "tihia"
- wine climbing in trees  
buds white "tihui"



24080 *Morinda citrifolia*  
common everywhere

81 *Premna* <sup>*obtusifolia* R.Br.</sup> *integrifolia*  
common everywhere

82 *Vigna marina*  
common, mostly along  
inner beach

83 *Wedelia biflora*  
common, more so along inner beach

84 *Cocos nucifera*  
dominant, undoubtedly  
planted but self seeding

cooking food in; sprouted nuts  
eaten raw or cooked; husks  
furnish fibers for sinnet <sup>cordage</sup> ~~cord~~,  
also dried and used for tinder, or  
rotted and used for compost.

"tinia" is general term and for large  
tree, "tirona" or "tirona" is small tree; "tirama"  
is dried leaves; "tironi" green leaves;  
"sagarapu" petioles; "tironin"  
leaf except petiole; "simotironin"  
is pinnae; "tikaka" fibrous stipules;

(over, to 147)

small tree 5 m. tall,  
(some twice as large),  
smaller trees usually  
~~are~~ sterile except in  
open, where also fruit  
grows larger. "tinona"  
shrub 1.5 m. tall,  
sterile. "tioraora"

prostrate, forming  
thick loose mat; flowers  
yellow. "tuakemoa"  
erect to ascending,  
up to 0.8 m. tall, flowers  
yellow "tiritai".

Tall trees up to 20-25 m.  
(this specimen from small  
sapling) basic plant  
in native economy, trunks  
used for house ~~posts~~ beams  
and sometimes posts; leaves  
woven into mats "sabalakaani"  
or house walls and roofs  
"tinai", young ones woven  
into hats and belts to sell  
to tourists; young nuts  
furnish drinking water,  
old ones <sup>eaten raw or</sup> grated and put  
into practically all  
food, shells used to

leaves of this specimen  
infected with "leaf  
rust of coconut"

24035. *Lepturus repens* (Forst.) R. Br.

one small patch <sup>seen</sup> here in  
open, common on some  
other islets.

86. *Thuarea involuta* (Forst. f.) R. Br.

one small patch seen here  
in open place, common on  
some other islets.

87. *Sophora tomentosa*

one small patch seen, in  
shade near dwelling, possibly  
planted.

88. *Cucurbita*

persisting from cultivation  
in thin woods.

89. *Sporobolus littoralis* B. P.

~~not~~ common locally

90. *Carica papaya* L.

not common, very local

"tiakai memepu" is flowers

"sonorin" is roots; "timataari"  
is very young, small nuts;  
"timumata" is half grown  
nuts; "timatu" full grown  
nuts; "tisup" is sprouted  
nuts; "suakang amatu" is  
husks; "tiipu" is shell;  
"tikarin" is nut meat.

tufts with runners  
"tikengasor"

prostrate

shrubs 1.5 m. tall, sterile;  
"ti rakaubaiho".

prostrate, extensive,  
sterile. "punken" said  
to have been cultivated  
by Japanese.

vine, mostly sterile;  
flower purple, deeper in  
center. "tihi" "ti akai hie"  
single stem up to 3 m. <sup>(not up to fl.)</sup>  
tall, fls. cream white, fragrant.  
"memepu" "tiakamemepu" is leaves.



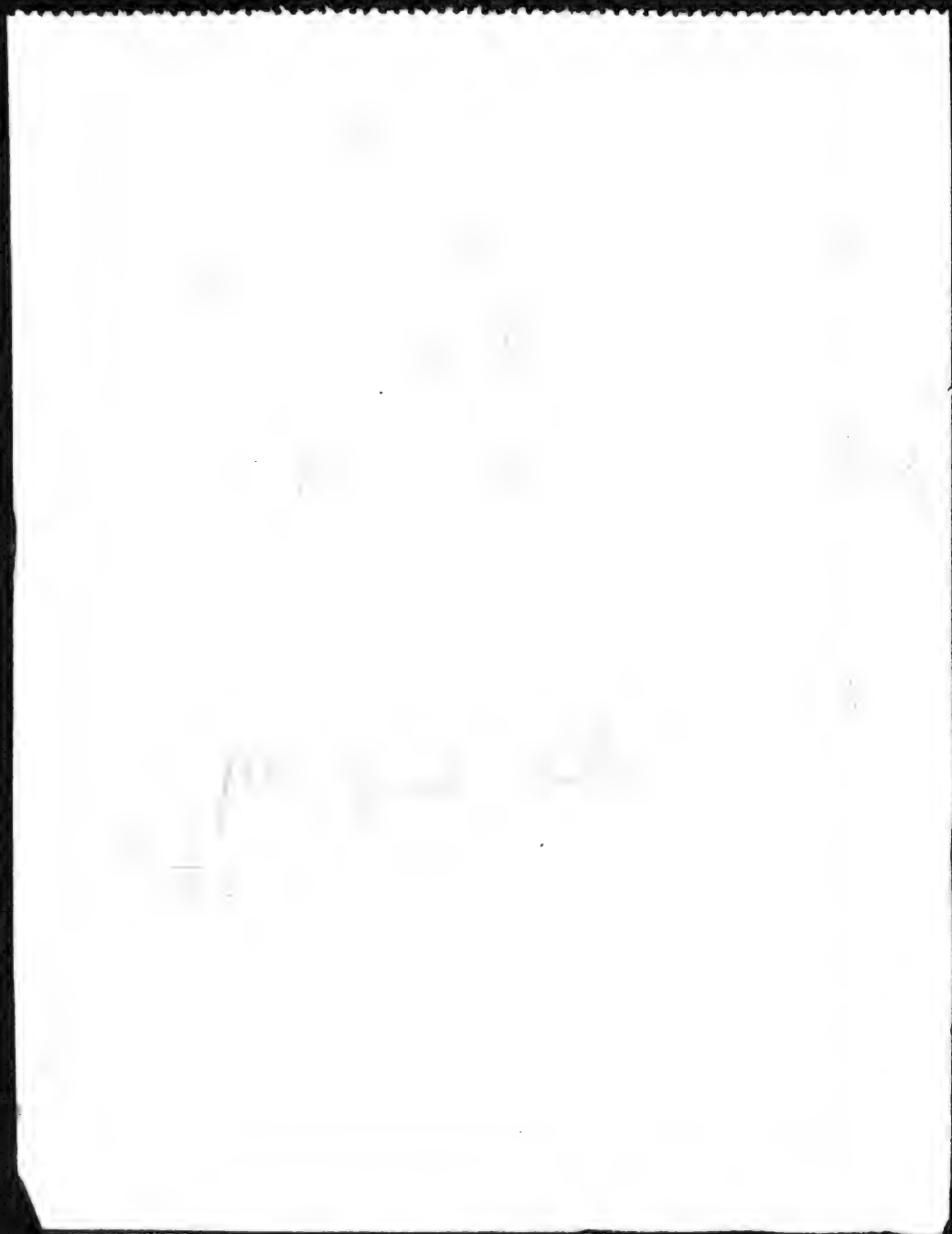
- 26091 Polyporus  
on dead wood
- 92 Trididemum agnathifolium  
common on rocks in shade
- 93 Polyporus  
~~common on~~ on dead wood
- 94 Leucophanes glauculum  
on bases of coconut trees
- 95 Tacca leontopodioides (L.) <sup>etal.</sup> type  
locally common
- 96 Ipomoea pes-caprae (L.)  
abundant in one place  
near Japanese establishment,  
especially in an enormous  
bomb crater
- 97 Pipturus argenteus (Forst.) Wimmer  
occasional in forest.
- 98 Musa <sup>paradisica</sup> sapientum  
planted ~~also~~ in much  
of edges of Cyrtosperma  
patch in excavation
- 99 Canavalia microcarpa? <sup>Cathartica Thunberg</sup>  
common locally in woods  
near inner beach

timeikiri tononui

herb 1.5 m. tall, very  
luxuriant, flowers  
green, linear bracts  
blackish, broad ones  
blackish toward margin.  
"timararatioken" tuber eaten  
prostrate, luxuriant,  
flowers bright purple,  
beginning to wilt in  
late afternoon. said to  
have been brought in by  
Japanese. "tihinuhe"  
shrub 2 m. tall; ripe  
fruit white; "tiwarenga"  
plant 2.5 m. tall  
"tihu" is plant  
~~tuber~~ "tirahus" leaves  
vine climbing in trees,  
sterile. "suakimo"







26100, *Hedychium coronarium*?

growing in wet mud  
of *Cyrtosperma* patch in  
excavations

01. *Jussiaea suffruticosa* var. *ligustrifolia* (HBK) Griseb.  
weed in *Cyrtosperma* patch  
in wet mud.

02. *Polypcias fruticosa*  
commonly planted, especially  
around cemeteries.

03. *Polypcias scutellaria*  
planted, especially around  
cemeteries.

04. *Cinnamomum asiaticum* L.  
commonly planted around  
houses and cemeteries.

05. *Plumeria rubra* L.

06. *Phome*  
common on rotting wood

07. *Flemingia nuda* (L.) Gaud.  
common locally in woods

08. *Thespesia populnea* (L.) A. C. Sm.  
very rare near inner beach.

09. *Premna ~~obtusifolia~~ integrifolia* A. Br.  
common everywhere  
this near inner beach

sterile, roots aromatic  
with ginger odor "sintia"  
flowers said to be worn  
behind ear.

erect herbs 1-1.5 m.

tall; flowers yellow;

"nikengarotoai".

erect herb 1-3 m. tall.

"tirakahumutaru"

inflorescence a terminal  
cluster of panicles arranged  
in 2 rough whorls.

erect, sterile, scarcely  
branched bush

"tirakapo humutaru poko"  
rosettes, sterile.

"sarataru" leaves are "tiran-  
tarataru".

small shrub 1 m. tall,  
sterile. "tirakamhaiakai".

stems fleshy, only  
slightly reddish.

"tiwarengas".

small sterile tree, very  
chlorotic "tipingipingi"

shrub 4 m. tall

"tiworoworo"



1946 Caroline Is.

26110, *Calophyllum inophyllum* L.  
occasional near inner beach,  
usually near dwellings

*Pandanus tectorius*  
coll. R. Oakley

Aug. 4 Soho (Toho, South Hou)  
Islet

completely occupied  
by village, herbaceous  
vegetation ~~completely~~ absent  
except a few planted things

11. *Zephyranthes rosea* Lindl.  
cultivated for borders

*Hirsutiola*  
*Nephrolepis multiflora* (Roxb.) Swartz.

12. *Cinnamomum asiaticum* L.  
cultivated extensively  
as an ornamental

13. *Plumeria rubra* L.  
cultivated

Kapingamarangi 173

tree 3 m. tall, (others larger)  
"te tau"

fruiting when stem is  
not more than 4 dm. tall.  
fruit very immature.

caespitose, fls. rose pink.  
"ti hakaai" said to have  
been brought from Ponape  
whence it had been  
brought from Marshall Is.,  
whence from Hawaii.

det.  
Fosberg & Wootton

leaves clear green,  
flowers white "taratai"  
flower worn behind ear.  
— shrub 2.5 m. tall,  
fls. white with yellow  
toward center, reddish  
outside, worn behind  
ear.

Aug. 11 Uenu Islet

with  
C. Wong

Mostly occupied along  
inner beach by village,  
Cyrtosperma patches in  
entire center, thickets  
along outer beach, with  
a few houses.

26114

on dead wood

15. ~~Lecanostictus~~ leucophanus glauculum  
on coconut trunk

16. Hibiscus tiliaceus L.  
common, most frequent.  
around Cyrtosperma patches

17. Cyrtosperma chamissonis Schott  
extensively cultivated in  
deep, muck-filled excavations

*Cyrtosperma* ~~with~~ *chamissonis* Schott  
det. P. Boyer 5/1998

18. Pandanus ~~fragrans~~ <sup>dubius</sup> ~~fragrans~~  
one tree seen, probably  
planted

19. Barringtonia asiatica (L.) Kuntz  
one small plant seen, probably  
planted

white, stipe orange.  
shape variable.  
light green cushion

tree 7 m. tall, flowers  
yellow, turning red.  
"ti-hau"

peduncle 1 m. tall, larger  
leaves 2-3 m. tall, scarcely  
prickly, very uniform.  
"ti-purau" corm eaten,  
is basic food of atoll.  
Cooked in pieces with  
coconut milk in coconut  
shells, or pounded and  
cooked with coconut milk  
as pudding.

tree 4 m. tall, sterile.

sedling 1.5 m. tall, sterile



26119. *Cordia variegata*  
planted, rare
20. *Terminalia catappa* L.  
planted rare
21. *Schrosia* (?) *terbena manghas* L. ?  
one tree seen, probably planted.
22. *Nephrolepis hirsutula* (Forst.) Presl  
common here, mostly  
on ~~seashore~~ outer side  
and around *Cyrtosperma*  
patches
23. *Polyporus*  
on dead wood
24. *Cassia alata* L.  
planted around edges  
of much in *Cyrtosperma* patches
25. *Paspalum vaginatum* Sw.  
one patch ~~left on~~, probably  
planted, on side of pile  
of coral from excavation  
for *Cyrtosperma* patch

- shrub 1.5 m. tall,  
leaves green above, purple  
below, somewhat variegated  
said to be brought from  
Ponape.
- small broken down  
sterile tree, "tikekepin"  
said to have been brought  
from Ponape. Pubescence brown.
- slender tree 7 m. tall,  
sterile, leaves very  
chlorotic.
- rhizome erect to  
decumbent, sometimes  
elongate "tinjo"
- sterile shrubs, 1-1.5  
m. tall, very chlorotic.  
"tirakahonuki" said to  
have been brought from  
Ponape.
- dense mat, sterile.

26/26. *Pandanus tectorius* P. & S.  
common

27. *Hibiscus* - hybrid prob.  
*rosa-sinensis* x *schizopetalus*  
cult. in edges of

*Cyrtosperma* patches in muds  
28. *Eragrostis amabilis* (L.) W. & A.  
one small patch in dooryard

29. *Digitaria pruriens* var. *pruriens* approaching var. *microbachne*  
along path in village

30. *Anisularia*  
on dead Coconut trunk

31. *Crinum*  
cultivated

32. *Eleusine indica* (L.) Gaertn.  
along path in village

tree 6 m. tall, fruits  
beneath on ground,  
said to be eaten, flesh  
yellow. "tipin".

~~cultivated~~ shrub 2  
m tall, flowers  
red.

spreading tufts.

gelatinous. said not  
to be eaten, locally.  
leaves reddish.  
peduncle and bracts  
maroon, flowers  
purple  
parts outside, esp.  
on mid-part of  
segments, tube purple.  
maroon  
large spreading  
tufts



1944

Caroline Is.

~~24~~ Aug. 4 Soho Is.26133, *Ocimum sanctum* L.  
planted, rare34 ~~*Cordia subcordata*~~

rare,

Aug. 4 Paraka Islet

small area of coconuts  
with small thicket on  
windward side - soil  
of rubble and broken rocks.34 *Cordia subcordata* Lam.

small group in thicket

Aug. 4 Nunakita (Nunakitsu)  
Islet.Coconuts on inner side,  
extensive low thickets on  
outer side.35 *Fimbristylis cymosa*  
very local.36 *Cucurbita*persisting from cultivation  
around old Japanese  
installation37 *Digitaria pruriens* var. *pruriens* approaching  
very abundant in opening,  
covering bombed Japanese  
installationvar.  
*microbachne*

Kapingamarangi

herb with strong odor,  
whitish flowers "aroak"  
~~racemes~~ racemes worn behind ear.tree 5 m. tall, sterile,  
twig tips badly damaged  
by insects. "tikakaumi"tufts, leaves somewhat  
stiff. "tikorokoro"  
prostrate, extensive,  
leaves gray spotted, only  
staminate flowers seen.  
"punku" <sup>these rang.</sup>  
deep tangles 1 m. deep.

- 26/38. *Thuarea involuta* (Pav.) <sup>182</sup>  
abundant locally,  
especially in openings
39. *Allophylus timorensis* Pl.  
rare, one plant seen
40. *Premna integrifolia* L.  
common everywhere
41. *Clerodendrum inerme* (L.) <sup>182</sup> <sup>183</sup>  
common, especially in  
openings
42. *Stenotaphrum ~~subulatum~~ <sup>microanthum</sup>* <sup>182</sup>  
~~common~~ abundant under  
coconut trees

#3

Aug. 4. Tuvaimu Islet  
small, pebble surface,  
covered with coconuts,  
rather open beneath

43. *Cassytha filiformis* -  
common, especially  
parasitic on *Guettarda*

44. *Triumfetta procumbens* L. <sup>182</sup>  
common generally,  
especially on inner side

Kapingamarangi  
forming a thick mat.

sterile bush 1 m. tall

small tree 4 m. tall,  
flowers pale green  
sprawling extensive  
shrub, flowers white,  
buds tipped with pink,  
stamens and style maroon-purple  
forming a thick mat.

leafless green vine  
(yellow in sun), flowers  
white, fruit green  
"tivioq"

prostrate, extensive  
flowers yellow.  
"Tamotiaka"

det. O. S. 26/14/1 a *Allophylus radiatus* (Sw.) <sup>182</sup>  
in dead wood.



Aug. 5. Matiro Islet  
Forest of Coconut, Pandanus  
some Artocarpus, some  
Guettarda, Morinda etc.  
little undergrowth

26145. *Occhrosia oppositifolia* (Lam.) ~~very~~  
~~common~~ in one small area

46. *Caesalpinia major* (Medic) Exell & Dandy?  
one plant seen

47

one plant seen

48. *Blechnum brownii* Lur.  
one patch seen, abundant  
in this patch

49. *Pandanus tectorius* Park.  
common everywhere

50. *Pandanus tectorius* Park.  
~~less~~ less common than #26145

51. *Terminalia catappa* -  
rare

tree 8 m. tall, fruit  
on ground beneath  
shrubby vine, sterile  
"tirakantutua"

sterile vine  
"tirakantoroto"  
prostrate, tips ascending  
flower lavender, rare.  
"tikeinatoto"

tree 4 m. tall (others  
much taller), leaves  
very long, fruit  
generally large, edible,  
"tipin"

tree 5 m. tall, fruit  
large and small on  
same tree, leaves short,  
stem more slender and  
leaves shorter than #26149  
fruits identical, both edible  
"tipin".

tree 8 m. tall, sterile,  
pubescence brown  
"tikekapin"

1946 Caroline Is.

26152 *Terminalia* <sup>samoensis Presl.</sup> ~~litoralis~~  
occasional

53, *Cordia subcordata* Lam.  
rare, near inner beach

Kapingamarangi Atoll

words picked up  
tihanuung - string of small  
glass beads

pahu - giant clam

tigiha  
or tikiha - white eel

tigarapi - black sea cucumber

tipeau - waves

niawaina - rain

tisai - sea

niawai - sea water

niawaitai - sea water dipped up

niherehere aure - soil

niherehere keene - sand

setepin - coral reef rock

tikahara - pandanus mat

tetu - chicken pik a pig - pig

~~land~~ + sound tends

to change to l, though

tikatai -  
round coconut  
leaf basket  
akai - flower  
ti hane - house

## Kapingamarangi

187

tree 6 m tall north.

Islets of Kapingamarangi Atoll  
(south to north)

Motokerekere

Fumatahachi

Terakaumea

Toko

Tia

Tari

Tirakau

Herekoro

Herengau

Hare

Tangawak

Takairong

Niguat

Seetau

Tipa

Hepepa

Hukuenua

Matahei

Tateng

Lamot

Matikatuk

Matiro (Machiro)

Pungupu or Pungapung

Taarin

Soho (Souhou) (Souwou)

Ueru

Paraka

Pukuniu

Nunakita (Nunakitsu)

Pepeio

Turuain (Turuwain)

Tingutor (Rugureru) (Rumetoru)

Toronghai

vannuon - faces broad,  
features rather coarse.



186

1946 Caroline Is.

26/12/46 Terminalia ~~litoralis~~ <sup>samoensis</sup> Rech.

Kapingamarangi

187

tree 5 m tall, mostly  
rather defoliated,  
pubescence not brown; sterile.  
fruit not eaten

"tirantarihia"

small tree, sterile,  
twigs all damaged  
by insects. "tirakaumea"

+ seems dominant. ~~he~~ tends  
to approach g, but ~~he~~ seems  
dominant. ng quite soft.  
t tends to change to ch, p to b.  
One black starling - like  
sand bird seen.

No white terns seen.

Black ones rather common.

People look Polynesian  
all right, though with  
some Micronesian admixture,  
a little Japanese in children,  
and a rather widespread  
tendency toward red hair.  
Many men quite heavily  
bearded.

Women tend to be fat,  
remarkably little facial  
variation. Faces broad,  
features rather coarse.

ending to  
not final  
vowel

to change u ~, u ~ ugr

tip

to 200

to 200

to 200

The islets are 32 in number, on the east half of the reef, forming a crescent. They vary greatly in size, from Hare which is  $\frac{1}{2}$  mile long to several which are not over 50 yards across. The soil is very good on most of the larger islands and becomes very little more rocky on the windward side. It is ordinarily more humus than sand, with pebbles on the surface. On the smaller islands rubble and broken rock predominate.

All of the islands are thickly planted to coconuts, though on ~~Hare~~ Nunakita the outer third has had them destroyed. They are now largely replanted. Here was a Japanese observation tower.

On some of the islands the coral seems to be elevated as much as 2-3 m., but

I saw no signs of makeatea development. One hill 10 m. or so exists made up of coral debris from *Lyptosperma* patch excavation.

Undergrowth is quite sparse, mostly young *Premna* and *Morinda*. *Artocarpus*, *Guetarda*, *Morinda*, and *Premna* are common in the forest. *Pisonia* <sup>*Hibiscus tiliaceus*</sup> occasional, *Ochrosia* rare and local. *Calophyllum* is occasional on the inner side, and often near houses. *Messerschmidia* is common as also *Guetarda*, on the outer beach. *Scaevola*, up to 5 m. tall, forms an outer fringe. *Lepturus* and *Fimbristylis* locally outside this.

A *Digitaria*-like grass is abundant under the trees. There are some indications that the lack of undergrowth results from periodic



clearing.

Epiphytes are very few, except for mosses and a few *Asplenium nidus* on the bases of coconut trees.

*Asplenium nidus* and *Thuidium* sp. are common on rocks and the former on the ground. The only other two ferns seen are *Pteris* sp. which is rare, and *Nephrolepis* sp. which is common on Uenu and, acc. ~~that~~ Paul Jantl, very abundant, forming the main undergrowth on the 2 northern islands.

The centers of ~~most~~ <sup>many</sup> of the islands, especially Uenu, are occupied by great pits partially filled with much formed from coconut husks and other rubbish, in which *Cyrtosperma* is cultivated, also *Colocasia* on much smaller scale, with a few bananas and ornamentals. A tremendous amount of

earth has been excavated and piled in dikes and hills along side *Cyrtosperma*, Breadfruit and coconut are the basic food plants of the island. With fish, hogs and poultry they make up most of the diet.

The striking thing about the flora is the absence of many of the expected ~~or~~ low island species, both native and weeds. Of course, since the islands were not thoroughly covered, it is not possible to be sure these species are absent. However <sup>lack of</sup> *Templis acidula*,

*Suriana maritima*, *Boerhavia diffusa*, *Sesuvium* ~~*portulacastrum*~~, *Cyperus* ~~*peruvianus*~~ <sup>*peruvianus*</sup>, *Euphorbia* sp. (25830), etc.

among native plants and *Portulacas*, *Euphorbias*, *Phyllanthus*, *Polypteron scolopendria*, *Aspalathus conjugatum*, *ernovia cinerea*, etc. among introduced

ones may be considered a measure of the isolation of the island. The *Pipers*, *Glochidion*, *Ficus tinctoria*, *Callicarpa*, etc. of the low Carolines further north are of course absent.

The only surprising species present are the *Pteris* and the ~~*Eleocharis*~~ common grass (26062, 26142).

It is to be expected that *Paspalum conjugatum* will shortly become established, as seeds were noticed on the shoes of several of our party when they went ashore.

Bamboo is absent but large culms may be seen in use. They have been brought from Ponape.





198 200



UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH ADMINISTRATION

BUREAU OF PLANT INDUSTRY, SOILS, AND  
AGRICULTURAL ENGINEERING

Division of  
Mycology and Disease Survey

BELTSVILLE, MARYLAND

February 14, 1947

Dr. F. R. Fosberg  
c/o Mr. S. P. Killip  
U. S. National Herbarium  
Smithsonian Institute  
Washington, D. C.

Dear Dr. Fosberg:

This is to report upon the identifications of the 23 specimens left in my care several days ago and referred to in my communication of February 10.

- 24592. Auricularia polytricha (Mont.) Sacc. (Det. W.W.D.)
- 24690. Polyporus microporus Sw. ex Fr. (Det. J.A.Stevenson)
- 24691. Pleurotus sp. (Det. D.)
- 24725. Uromyces proeminens (DC.) Pass. II-III. (Det. S.)
- 24940. Polyporus sanguinens L. ex Fr. (Det. S. & D.)
- 24941. Polyporus crocatus Fr. (Det. S.)
- 26091. Polyporus gallo-pavonius (Sw. ) Fr. (Det. S.)
- 26093. Polyporus gallo-pavonius (Sw.) Fr.
- 26106. Fomes applanatus (Fr.) Gill. (Det. S.)
- 26114. Xerotus rawakensis Pers. ex Fr. var. excentricus Mont. (Det. D.)
- 26123. Polyporus occidentalis Kl. (Det. S.)
- 26130. Auricularia polytricha (Mont.) Sacc. (Det. D.)
- 26141. Schizophyllum radiatum (Sw.) Fr. (Det. D.) (label lacking)
- 26417. Sticta dichotoma Bory (Det. D.)
- 26467. Polyporus flabelliformis Kl. (Det. S.)
- 26530. Polyporus gallo-pavonius Berk. (Det. S.)
- 26531. Polyporus microporus Sw. ex Fr. (Det. S.)
- 26532. Ganoderma mangiferae Lev. ( " S )
- 26689. Polyporus sanguineus L. ex Fr. (Det. S.)
- 26829. Fomes applanatus (Fr.) Gill. ( " " )
- 26830. Polyporus gallo-pavonius Berk. ( " " )
- 26844. Auricularia polytricha (Mont.) Sacc. ( " " )
- 27007. Albugo plantensis (Speg.) Swingle ( " " )

One specimen of each of the above is deposited in the Mycological Collections here and, as agreed upon when you left them in my care, where possible one replicate for the University of Hawaii and additional replicates for your other disposition are returned herewith. In the case of number 24691 the material was too scant for division and consequently all of it is deposited here.

Very truly yours,

William W. Diehl  
Mycologist



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